Beyond the Thermostat: A Theory of Public Opinion Change

K. Elizabeth Coggins, James A. Stimson,
Mary Layton Atkinson, and Frank R. Baumgartner

Abstract

The thermostatic model is the leading theory explaining longitudinal change in public opinion in the United States and elsewhere. We add to that theory by elucidating the key role of consistent party cues for citizen inferences. Consistent party cues, we show, is key to making the thermostat work. On issues where the parties regularly take opposing positions, the thermostat successfully explains opinion movement. But we identify two other opinion types, nonpartisan issue sets and cases of absolute opinion change where the thermostat fails. We develop and classify 66 new measures of policy specific mood for analysis. Finally, we take up the strange cases of trending attitudes, a rarity in opinion movement. We conclude that the thermostat is a strong theory for a particularly important subset of issues, those which define the party debate, but our expanded database allows us to subsume it into a broader theory of opinion movement.

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With the development of empirical estimation of aggregate public opinion (Stimson 1991) has come the need to explain why opinion moves as it does. By far the most successful of these explanations is the thermostatic model of Wlezien (1995) and Soroka and Wlezien (2010). The thermostatic model is a simple, yet very powerful, framework that connects government action to public opinion response. It is, in essence, a model of democracy. Functioning democratic institutions, the model suggests, require their publics to be decently well-informed about what policymakers actually do. Electorally-motivated politicians then pay close attention to resulting shifts in opinion. The public, thus, functions much like a common thermostat—expressing its preferences for warmer or cooler temperatures—and policy makers serve as the feedback unit, responding to those changing temperature preferences.

The theory of thermostatic response is straightforward and elegant: when the public sends a signal to change the temperature, to turn up the heat, for example, policymakers respond. But as the policy temperature approaches the ideal temperature, the public's signal for change reduces. The public adjusts its preferences for more spending downward when appropriations increase—and upward when appropriations decrease (Wlezien 1995). This negative feedback of policy on preferences is a critical piece of the thermostatic model—it is evidence of an informed public.

In their well-known cross-national study, Soroka and Wlezien (2010) find the thermostatic model to be widely applicable across issue domains and institutional designs. Perhaps even more impressive, thermostatic response is evident beyond just small sectors of highly attentive citizens. Indeed, it is pervasive. Citizens of the U.S., U.K., and Canada send signals for change, and they get policy change in response. When the response goes too far in one direction, citizens send a new signal, and representatives dial back their actions. Response varies across countries and across conditions, but the overarching message is unmistakable: representative democratic government works quite well.

We now have the luxury of a much richer dataset of public opinion. And, with the development of individual longitudinal public opinion measures for more than 60 policy domains in the United States, we have a need to explain each of them. We formalize the thermostat for that purpose. In the process of applying it we discover that it is indeed useful and powerful for some very important cases. And we also discover that it has limits and does not apply to other cases. We develop an overarching theory of opinion change, relying on the central role of party cues and stimuli that induce individual-level and generational opinion change as the active agents. Our theory makes room for both thermostatic and non-thermostatic opinion change, explaining when we can expect specific types of opinion change among the American public.

A Theory and Model of Public Opinion Change

We begin with the assumption of an inattentive electorate, one that cares about public policy in an ill-defined way, but does not care enough to be very well informed. We postulate that the public has cognitions that are roughly accurate about the main line of disagreements between the parties. But these are far less rich and detailed than the latest wrinkles or strategic policy positions. This public knows, in a general sort of way, that the Democrats want government to do more and spend more, to play a larger role in equally dividing the economic pie, and that Republicans take roughly the opposite positions. These policy scripts we will refer to as party cues, what the parties say and do to maintain their images with the public.

Party Control and Public Inference Although short on political knowledge of specific kinds, the electorate does know which party controls the White House at any given time. We postulate that it uses this knowledge to make inferences about public policy. If, for

example, Democrats are in power, regardless of the specifics of legislation proposed or acted upon, it infers that policy is changing in a liberal, government expanding, direction. This is 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 details. How would we explain, for example, that Barack Obama's Affordable Care Act was perceived as a decisively liberal approach to heath care, when its central feature, the individual mandate, was a product of the Heritage Foundation and the whole plan, based on private sector providers and insurers, emulated the program put forward by Mitt Romney in Massachusetts? The answer is inference. The plan was put forward by Obama and its passage was almost entirely by Democratic votes. Therefore it was liberal by inference.

From the assumption of inattentiveness, it follows that the public only roughly knows where the parties stand. It knows the issues that are the source of party conflict, the source of party cues, year after year, those that get renewed and reinforced in every decade. Parties also take stands on issues that are episodic. Republicans, for example, once opposed Social Security. But after it was passed and became immensely popular, Republicans stopped opposing it entirely and even came to assert that they would do a better job of protecting its future. Many other issues have this character, that party differences are episodic rather than lasting. It takes a lot of attentiveness to know that Democrats stressed aid to cities in a period when urban life was central to the political dialogue and then lost interest in later years. Thus our story of inference-making restricts it to the kinds of issue stands that one can know without working hard at it.

In contrast to Soroka and Wlezien (2010), we do not think that the electorate knows—or needs to know—things like the general level of appropriations. That is a lot of detail and complexity. One can just infer that spending is probably up if Democrats are in the White House or down if Republicans are in control. Crucially that means that all that

needs to be known with any certainty is which party is in power. The rest can be inferred, and with a decent, if imperfect, level of accuracy. Thus we propose opinion that behaves thermostatically, becoming more conservative when liberals are in power and more liberal when conservatives are in power. Such thermostatic response is widely observed. But its scope is not universal.

We can now state the limits of the thermostat. It works where party cues are regular and powerful, in cases of issue conflict. On issues where the party positions are mixed, confused, or episodic, it does not work. The public, that is, cannot infer party positions where the parties do not regularly take opposing positions. There are many issues where the parties take no stand at all. And there are many where the stands require more knowledge of the history of policy disputes than the mass public possesses. Where knowing party positions is easy, then the thermostat dominates. Where it is not easy, the thermostat fails.

Our micro theory implies a model of macro-level opinion dynamics. We take that up now.

Three Kinds of Issues Begin with party cue issues. These are the main line of party disagreement resulting from The New Deal and Great Society programs, issues about the role of government in the economy, regulation, the social safety net and, in general, the scope of government, how much it should do, how much it should spend, and how much it should tax to pay for that spending. The Democrats regularly take the liberal, government expanding, position. The Republicans regularly take the conservative, government contracting, position. This description fits the general tendency, but the scope of these conflicts has an elastic boundary and changes over time.

Because these sorts of issues are of central importance for party and ideological controversy, they are well and frequently measured in survey research. Opinion surveys tend to measure that which is interesting, and being at the center of party politics makes these issues

interesting. Although we have no theory of the potential issue space, we can imagine that it could be vastly larger than these party conflict issues, but with large numbers of *potential* issues lacking the interest that would make them subject to survey questions.

Not every public issue leads to party conflict. Among the policy choices that government must attend to, there are many that never become party-defining issues. The Federal Government regularly makes decisions about what to do in space travel, how much to fund science, 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. Democratic and Republican governments make pretty much the same decisions in these areas. Surely there are genuine conflicts in each of these cases. But they are not *party* conflicts. The thermostatic model is not false for these cases. It simply doesn't apply.

Most opinion change in the thermostatic account is relative change. Citizens with relatively fixed views, that is, encounter the changing stimulus of the parties alternating in power, and adjust their views accordingly. Liberal party cues make the electorate more conservative and conservative party cues make it more liberal. And this could be true even if no citizen ever changed views in an absolute sense.

But we can imagine absolute change as yet a third possibility. In this view, citizens may change their policy preferences relative to their previous preferences, becoming more liberal or conservative on some issue, for example. And the distinctive difference of such absolute opinion change is that it does not depend upon party cues. If something happens that leads people to change their views, some real response to a real stimulus (e.g., war, depression, social movement), then that change will tend to be permanent and it will not be responsive to party cues. And contrary to Soroka and Wlezien's contention, these changes can occur in domains of true public importance. Because we do not posit the party cue as the cause

of the change, then there is equally no reason to expect a reversal when there is a change of party control.

On this set of potential issues the thermostatic model is the wrong model. It posits changing party cues (from changing party control) as the causal force and for these hypothetical cases (which we will see are real cases) that is simply the wrong causal model. Something else is causing opinion change and it does not cease or alter with a change of party control.

Our theory of the role of party cues thus borrows from the thermostatic account for the important set of issues where the parties regularly offer up opposite cues. But it also extends to opinion dynamics in cases where the party cues do not particularly matter. Thus, party cues play one leading role in our theory of what drives opinion change in the American context.

Of our distinction of issue types, here we deal with the crucially important difference between absolute and relative (i.e., thermostatic) change. We expand this theory of opinion change to include the stimuli of generational changes, our second leading actor. We posit that those stimuli—whether they be the reframing of an issue by a successful social movement, or a set of powerful, connected events—are the force that induces real opinion change among individuals *and* generational change. These stimuli induce absolute opinion change.

Absolute and Thermostatic Opinion Change Public opinion is in part response to the stimulus of government action. Thus, it may be interpreted as the answer to the question, 'What does the public want from government?' Or, since government action changes over time, it may be a relative response to what government has done recently. If policy were as simple as how much to spend, for example, the first type of opinion—which we will call "absolute"—would be the dollar figure for a particular program. The second type—"relative" or thermostatic—would express a desire for more or less spending than the current level.

Relative attitudes might change either because (a) an individual alters his or her absolute

preferences, or (b) an individual with fixed preferences encounters changing government policy and thus alters back and forth between more and less to maintain a fixed position in light of a changing government. While empirically separating absolute and relative changes is a challenging task, we would like here to separate them into ideal types to clarify their theoretical standing.

Relative Preference Change For theoretical clarity assume that people have fixed (absolute) preferences over policy options. Assume also that government policy changes with changes in party control of the White House. Thus a rational public will change relative attitudes to accommodate changed policy with its position.

How does this micro theory of the loosely informed citizen responding to changing party cues and control of government yield predictions about the shape of aggregate public opinion? That is our task now, turning theory into model.

A Model of Aggregate Dynamics

Here we wish to introduce some assumptions about the electorate and deduce the result of them. First, instead of a single individual, we will assume an electorate which is distributed over a scale of absolute preferences from left to right. Then we will expose this electorate to changing government policy over time.

Assume that each member of our hypothetical electorate has absolutely fixed preferences. Assume also cardinal utility on a scale from 0 to 100. Assume two parties, D and R, with mean policy positions left and right of the median voter. For a specific illustration—but the logic is more general—we will place the parties at 30 (D) and 70 (R).

Assume that we measure relative attitudes with a question of the form, "Should government do more, less, or about the same as it is currently doing?" What are the induced

dynamics?

If we divide the population into three groups, it is possible to deduce the response. Consider three groups as follows:

A All of those people with preferences less than or equal to D (i.e., to the left of 30).

B All of those people situated between D and R, (30 and 70, i.e., moderates).

C All of those people with preferences greater than or equal to R (i.e., to the right of 70).

Now we ask how will the three groups respond to a change of party control—say from D to R? That will induce a typical policy change from D's normal policy around 30 to R's normal policy around 70.

A Prefers policies to the left of D and will not be affected by the change. It will assert, as it had before the change, that government should do more.

B Preferred "less" on balance (because the D government was to its left) and will now shift to "more" on balance (because the new R government is to its right).

C Prefers policies to the right of R and will not be affected by the change. It will assert "less" as it did before the change.

Notice that everyone under these assumptions either stays constant (A and C) or shifts from "less" to "more" (B). Thus the net shift for the electorate as a whole is from less to more, the expected thermostatic response. Thus with no actual change of preferences we get a relative change in preferences because the stimulus alters with party control. Note also that in this hypothetical scenario, all categories observe the party in power and infer the same policy position for it. In the real world things would be more complicated, but this simplification captures the essential dynamic.

Calibrating Dynamics With these simple assumptions, our little model does not yield any predictions about the level of our preference concept, just that it changes as a result of party change and that the direction of change will always be opposite the position of the party of the president. For the sake of simplicity let us now assume away indifference. That is, we will not allow any of our hypothetical citizens to think that the level of current policy is about right. Instead we will force them to choose between "do more" and "do less." We will also need to assume something about the numbers of the three types, here that they are equal. With these admittedly unrealistic assumptions we can predict what our expressed preferences would be.

Now we introduce a hypothetical measure of preferences, the percent of the public advocating more government. Our hypothetical measure will be the percent of those saying that government should do more divided by the totals for "do more" and "do less." This is liberalism as understood in the American context. Thus for the initial period when government is controlled by D, group A will say that government should do more and B and C will say it should do less, a score of 33.3 because one third are asserting "do more." After the transition to Party R, A and B will join together in asserting "do more," producing a score of 66.7. A further transition back to D will similarly produce a score of 33.3. And so forth.

If we now assume regular changes of party control and policy—every 8 to 12 years—then the relative public opinion response will cycle over that same period. If this thermostatic model is correct, and we hold to our assumption that absolute preferences are fixed, then the mean of aggregate public opinion will tend to cycle left and right opposite changes in party control over time.

What we now know from this simple exercise in logic is that fixed absolute preferences of the electorate, combined with changing control of government will produce cycles of public opinion. These simplistic assumptions give us fairly radical and abrupt cycling behavior.

Now we make our assumptions more realistic in two regards. First we will reintroduce the possibility of indifference so that some nontrivial segment of the electorate will sense that policy is "about right." That will reduce the range of variation so that there will be higher lows and lower highs. Second, we will let policy change be gradual, so that neither D nor R realize their policy goals immediately and public response will be therefore delayed rather than instantaneous. (If the public is just inferring policy change then a party in power for a little while will have produced a little change in its normal direction, while a party in power for a long while will have produced a lot of change in that same direction.) This will eliminate the abrupt changes at transitions and produce cumulative responses in accord with cumulative policy change. What we get from this set of assumptions is a gradual cycling of expressed preferences that looks a lot like what we observe in public policy mood (Stimson 1999; Erikson, MacKuen and Stimson 2002; Soroka and Wlezien 2010; Merrill, Grofman and Brunell 2008).

Absolute Preference Change What of absolute preference changes where the individual is changing from a previous level of preference for some policy to a different one? Perhaps he or she thinks at one time that gays and lesbians should be subject to discrimination and later decides that they should not be. Absolute changes would not be explained by changes in government policy. 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 aim to put forth the theory of what causes absolute opinion change. Thus, 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).

Constant Preferences Another logical possibility is no change at all. In the absence of partisan differences or differences in attitudes based on birth cohort, some opinion series may be stable over time. (These may also not regularly be surveyed, as they are not politicized and are rarely a topic of public debate—so we may not see much written about them in the public opinion literature, and indeed there may be little documentation about them at all.) Such topics include, for example, the management of federal parks and policies related to NASA.[1]

In order to test this theory, we need to do two things. First, we need to develop the data themselves. And second, we need to provide a test for whether in fact, opinion change in thermostatic. Before putting the theory of party cues to the test, we pause to lay out the development of our empirical testbed, large numbers of opinion time series.

Research Design I: Developing Policy Specific Moods

We wish to introduce a new data source: The Policy Specific Public Mood Database.[2]

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

[1] Attitudes toward abortion provide a rare example of an issue that has been highly politicized (since *Roe v. Wade*) and yet receives nearly constant levels of public support and opposition over time. Attitudes on this topic may exhibit stability despite the politicized nature of the issue because the federal government rarely visits the issue, providing little stimulus for public reaction.

[2] Estimated series are available at http://www.policyagendas.org and in the coming months, users will be able to create their own series, selecting specific survey questions to build unique series as well as utilize pre-estimated series based on the Policy Agendas coding scheme.

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.[3] 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.[4] In most instances, the data were not "thick" enough to permit this type 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.[5] Such massive numbers create a new opportunity, one unprecedented in the field of political science—the estimation of multiple policy moods. We now have the ability to disaggregate 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.

To estimate these series required a method for disaggregating the Mood database. We began by matching each of the 364 survey questions with a topic from the Policy Agendas Project Codebook (http://www.policyagendas.org). For multi-dimensional questions, those that tapped more than one policy area, we assigned multiple codes. For questions without

[3]For a condensed version of the criteria for survey question inclusion, see the Appendix. For a detailed account, see Stimson (1991).

[4]And in a few instances such series were created. See, for instance Kellstedt (2003); Baumgartner, DeBoef and Boydstun (2008).

[5]These figures represent data collection through 2010. Collection of additional survey items was funded by the National Science Foundation, Award #xxxxxx.

a clear link to a Policy Agendas code, we assigned a new code.[6] This assigning of codes and creation of new categories left us with 66 usable series.

Creating Policy-Specific Mood Series Once the database raw items were coded by the Agendas Project policy coding scheme, all that was required was to employ the dyad ratios algorithm for dimensional analysis to a selection of items (by policy codes) to generate each of the possible output series. There is a mismatch between the topics government chooses to attend to (the basis of the policy agendas codes) and the questions survey organizations choose to pose. Thus usable series are created only for the subset of policy codes where data richness permits estimation.

A usable series, by our criteria, is one that (1) covers a reasonable time span (10 years or more) and (2) contains enough survey items to generate reliable and valid estimates. These decisions were made on a case-by-case basis, with two main guiding rules. First, in the case that a policy-specific mood series contains a small number (1-3) of survey questions, these items must be high quality measures of the concept we wish to tap. For example, there are two survey questions with Policy Agendas Code 1211, "Riots and Crime Prevention." One item asks respondents to place themselves on a scale determining the best way to deal with the problem of urban unrest and rioting. One end of the scale claims it is more important to use all available force to maintain law and order—no matter what results, while the other end claims it is more important to correct the problems of poverty and unemployment that give rise to the disturbances. The second survey item asks respondents whether the government is spending too much, too little, or the right amount on the rising crime rate. These two

[6]New codes were used for simplicity in the estimation phase, but will not appear in the Policy Agendas Codebook. We also identify these series by alphabetic names. For example, many question items tap respondent views on abortion, but few policy matters mention "abortion" explicitly. As such, the Policy Agendas Codebook includes "women's abortion rights" in Policy Code 208, "Right to Privacy and Access to Government Information." Because of the importance of abortion matters in the arena of public opinion, we estimate two series, one that includes only abortion survey items called "Abortion Policy Mood" and one that includes all question series matched with an Agendas 208 code.

items do a decent job of capturing the mood of respondents in the arena of riots and crime prevention, despite the small number of questions used to achieve the task.

Because excessive gaps in question administrations alter the mood estimates, gaps of more than five years are not tolerated. For example, a survey house may ask a specific question in 1960, but then not ask the question again until 1970. If this question series is our only source of data for the early part of the series (1960-1970), we simply drop this portion of the mood series. In the case of missing data, the dyad ratios algorithm interpolates data to generate estimates for the missing years. In cases of excessive missing cases (more than five years) such as these, we cannot guarantee the quality of the estimates and do not report them. Such gaps, however, are rare in our data.

Many of the series we create are more narrowly focused than are the Policy Agendas subtopic codes. In the Agendas coding, for instance, handgun control is combined with rights of police officers during internal investigations and with police misconduct issues. To clarify that our measure of attitudes toward gun control does not include attitudes toward the additional issues contained within Agendas subtopic 1209, we created a new code for this narrower topic of handgun control.[7]

Using this method, we decompose mood into 66 policy-specific mood series, covering a wide range of issues. The value of such data to scholars is evident. First, instead of using global policy mood as a stand-in for all policy-specific studies, scholars will be able to tap into public opinion in their particular area of interest. Detailed diagnostic information is provided for each of the estimated series, including number of questions used to estimate the series, number of administrations, question wording, and survey item loading in the dyad ratios algorithm.[8] These data provide the user with a thorough map of how series are generated and what aspects of public opinion are exploited to estimate our policy-specific

[7] In such cases, we also estimate a mood series for the full subtopic where appropriate.

[8] An example can be found in the Appendix. The full codebook will be available online.

series. Moreover, item loadings diagnostics allow users to identify precisely which aspects of attitudes define and dominate their policy mood series. Lastly, and most importantly for our purposes here, disaggregation affords us the opportunity to look deeper into the nature of public opinion.

Research Design II: Classification of Issues

If we were to classify issues into our three types, party cue, no party cue, and absolute opinion change, we would expect to see empirical evidence of thermostatic behavior only for the first. We lack a formal mechanism for classification of issues into types. But less formal judgments are still possible.[9] We pretty much know which issues are subject to regular party disagreements and which are not. The former, for example, are the sorts of survey questions that regularly separate Democrats and Republicans and the latter do not. And we can spot issue domains that are not cyclical because something other than party control is driving them. But these are, theoretically speaking, casual classifications.

Having classified, it should be the case that thermostatic issue domains show thermostatic behavior and others do not. How then can we observe thermostatic behavior?

A Test for Thermostatic Opinion Response

We wish to develop a simple test of the idea that opinion movement is thermostatic, and responsive to changes in presidential party control, the key to our theory of what drives the thermostat. A natural starting point is to define movement as a year to year first difference, $\Delta y = y_t - y_{t-1}$ for all t. But the direction of our opinion measure is in the

[9]Because these *a priori* judgements are partly subjective, the results in tables to come might be best viewed as illustrations of pattern rather than formal hypothesis tests. What we have not done, however, is to let the empirical result dictate the classification.

direction of liberalism. So we are half right to start: under Democratic administrations we expect negative first differences, capturing the idea that movement is away from the party in power. To make this work also for Republican administrations we reflect our first difference scores by multiplying by -1 during years when the President is a Republican. For either party, negative movements now imply movement away from the party's position and positive movements imply movements toward it. Our expectation naturally follows: *thermostatic opinion response will produce movement in public opinion away from the party in power.* Our party-reflected first differences should be negative on average if the thermostatic response is operating.

Thus, all we need do is observe the mean of the party-reflected first differences score. If the mean is zero, then there is no evidence of thermostatic response. If negative, then there is. And if positive, we have a strange animal that is definitely not thermostatic. So a simple test against a mean of zero provides the test of thermostatic response. "Party-reflected mean first differences" is a mouthful, so we will refer to the coefficient simply as the thermostatic test (or Coefficient in Tables 1-3).

We begin with the issue series that we have classified as party cue issues—and therefore thermostatic response functions. These are the standard materials of party debate, New Deal scope of government controversies with the addition of newer issues such as abortion, gun control, and contraception that are prominent in the social issues dimension of party conflict.

We display the test result, for issue series where established party cues are prominent, in Table 1 where we array 21 series selected for series length greater than 30 years. The series are presented in ascending order of the t values for each coefficient, ranking from most negative to most positive. Where Policy Agendas coding is relevant, the policy code is displayed in the second column. We also include domains outside of those suggested by the

Policy Agendas Project (i.e., Scope of Government).

Table 1: The Thermostatic Opinion Change Test Applied to 21 Consistently & Strongly Partisan Issue Series

Series	Policy Code	Coefficient	t	p	N
Macroeconomics	100-199	-0.790	-2.92	0.002	61
Scope of Government	NA	-0.775	-2.81	0.003	54
Taxation	107	-0.686	-2.63	0.005	64
Religion in Public Life, Prayer	207	-0.457	-2.63	0.006	45
Health	300-399	-0.482	-2.32	0.012	63
Defense	1600	-2.385	-2.21	0.016	51
Privacy (includes civil liberties, abortion, and contraception)	208	-0.497	-2.16	0.018	50
Healthcare Reform	301	-0.567	-2.03	0.023	55
Abortion (only)	NA	-0.438	-1.96	0.028	52
Social Welfare	1300	-0.801	-1.88	0.033	46
Regulating Business	1500	-0.410	-1.80	0.038	65
Job Creation	100	-0.424	-1.58	0.060	55
Role of Government	2000-2099	-0.448	-1.56	0.063	53
Size of Government	2000	-0.719	-1.41	0.083	46
Inflation	101	-0.478	-1.25	0.109	33
Labor	500	-0.453	-1.15	0.129	45
Handgun Control	1212	-0.402	-0.90	0.186	52
Environmental Issues	700-799	-0.376	-0.87	0.195	40
Government Spending	NA	-0.136	-0.27	0.394	55
Unemployment	103	-0.021	-0.04	0.485	42
Trade Unions	504	0.052	0.23	0.409	63

"Coefficient" is the mean party-control reflected first difference. $\frac{\sum_1^T \Delta y}{T}$ With the normal negative sign, it expresses annual percentage change away from the party of the President.

What we see in Table 1 is what we expected to see. This issue set produces predominantly thermostatic response with a hefty 20 out of 21 issue series showing the expected negative coefficients, indicating public opinion movement away from the position of the party in power. (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.)

One unexpected result is the near zero coefficient for trade unions. A hot button party issue for a few years in the 1940s and 1950s, trade unions seem to have lost their party coloration for most of the time after that. (And the newly controversial aspect resulting from the Tea Party election of 2010 and state movements against public employees unions is too new to leave any mark on our series.) Abortion opinion, while thermostatic based on our simple test, is a special case. The series is tightly bounded, with opinion moving from the lower bound of 60% liberalism to an upper bound of 70% liberalism. In policy mood speak, this means that abortion public opinion is basically liberal and basically stable. But, opinion movement within this small bound is thermostatic.

Next we perform the same test on a set of issue domains that historically are characterized by absence of party cues or cues that are only episodically partisan. 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. Thus there is no dominant alternating stimulus that could produce the cycling with party control that we see in party cue issues.[10]

Table 2 shows that only four of the 10 issue domains have negative reactions to current policy and none significantly. Instead we see pretty clear evidence that party control does not matter. Soroka and Wlezien (2010) conclude that it is public importance that determines whether or not the public responds thermostatically:

> ...We expect responsiveness only in domains of some public importance—that is, we do not (and should not) expect citizens to respond in domains about which they care relatively little. (Soroka and Wlezien 2010, p. 169)

[10]Social Security is a potential party cue issue, a Democratic program that Republicans itch to oppose. But because of its overwhelming popularity, they do not do so, neither actually cutting nor proposing to do so in their platforms. 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.

Table 2: The Thermostatic Opinion Change Test Applied to 10 Episodically Partisan Issue Series

Series	Policy Code	Coefficient	t	p	N
Education	600-699	-0.145	-0.96	0.171	53
Criminal Code	1210	-0.159	-0.74	0.231	57
Elementary & Secondary Education	602	-0.102	-0.65	0.259	53
Social Security	1303	-0.076	-0.36	0.362	31
Riots and Crime Prevention	1211	0.009	0.03	0.489	40
Drug Addiction Treatment	1203	0.106	0.36	0.359	36
Aid to Cities	1403	0.141	0.38	0.354	44
Public Lands and Water Management	2100-2199	0.192	0.97	0.167	63
NASA Spending	1701	0.892	1.54	0.066	36
Science and Technology	1700-1799	1.524	1.68	0.050	36

Here we differ from Soroka and Wlezien. Our theory points to the existence of stable party cues as the causal force producing thermostatic response. But issues can be important without having stable party cues. To be fair, the two go together, of course. Issues *become* important when they are grist for party debate. And so party cue issues tend to be seen as important issues. Furthermore, we believe that the public's perception of the party—the expectations citizens tie to the parties (e.g., Democratic administrations spend more)—is the driving force behind the thermostat. This explains why, for example, we observe thermostatic response even when governments *are not acting* (Erikson, MacKuen and Stimson 2002). Party names provide quick cues on which citizens rely and use to make assumptions about what government is doing in areas where they are less informed. We are hardly the first to suggest the power of heuristics in politics (e.g., Kuklinski et al. 2000; Popkin 1991; Dancey and Sheagley 2013). But this attention to party cues we stress also helps explain why we may *not* observe thermostatic response in some salient and important policy areas like crime and Social Security: the parties' platforms do not differ in obvious ways. These domains are not unimportant, but the public is not receiving divergent party cues either.

But there is a final category: undoubtedly *important* domains, but which do not respond

to changes in party control, and surely do not respond thermostatically. Three issues which fit this category are beliefs about equal rights for blacks, women, and gays. These three equality issues show over time trends indicative of absolute opinion change. As Americans become ever more supportive of equal rights for blacks, women, and gays, they are not responding to the party of government.[11] Instead, each in its own way responded 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.[12]

Indeed, these issues are among the most important of our time. They are obviously salient in contrast to Soroka and Wlezien's position that salient issues are always thermostatic. We shall explore the trending behavior of these series below. This trending behavior in opinion change requires an explanation. Our explanation for these is that real opinion change is going on. Because these issues are largely unresponsive to control of government, the thermostatic tests of Table 3 are all nonsignificant.

Table 3: The Thermostatic Opinion Change Test Applied to 3 Trending Series

Series	Policy Code	Coefficient	t	p	N
Black Civil Rights	201	-0.101	-0.62	0.270	63
Gay Rights	NA	0.871	.10	0.462	34
Women's Rights	NA	0.075	0.35	0.364	39

Figure 1 provides a supplemental illustration of these findings. The thick black line represents Stimson's policy mood, a longitudinal estimation of public opinion across a myriad of issues. We generated the other lines, labeled Partisan Issues, Episodically Partisan Issues, and Trending Issues, by calculating the mean "mood" for each table. Thus, the time series of Table 1 represents the means of the series in Table 1, comprising those issues we suggest

[11] In the case of black rights we can detect some thermostatic response (Kellstedt 2003), but it is largely overwhelmed by an underlying linear trend toward great acceptance of equality.

[12] See ahead to Tables 4-6 for statistical support.

are consistently and strongly partisan. This line should track pretty closely with "Mood," which it does, correlating at $r = .71$. Episodically partisan issues, however, should be less consistent with policy mood, and the series for Table 2 demonstrates this ($r = .28$). Finally, the time series of Table 3 looks very different from policy mood, as we expected. This line represents the average mood across equality issues, and the time series shows a strong linear trend toward liberalism, especially since the 1980s, and correlates with mood rather poorly, $r = .25$.[13] We explore these equality series in depth in the next section.

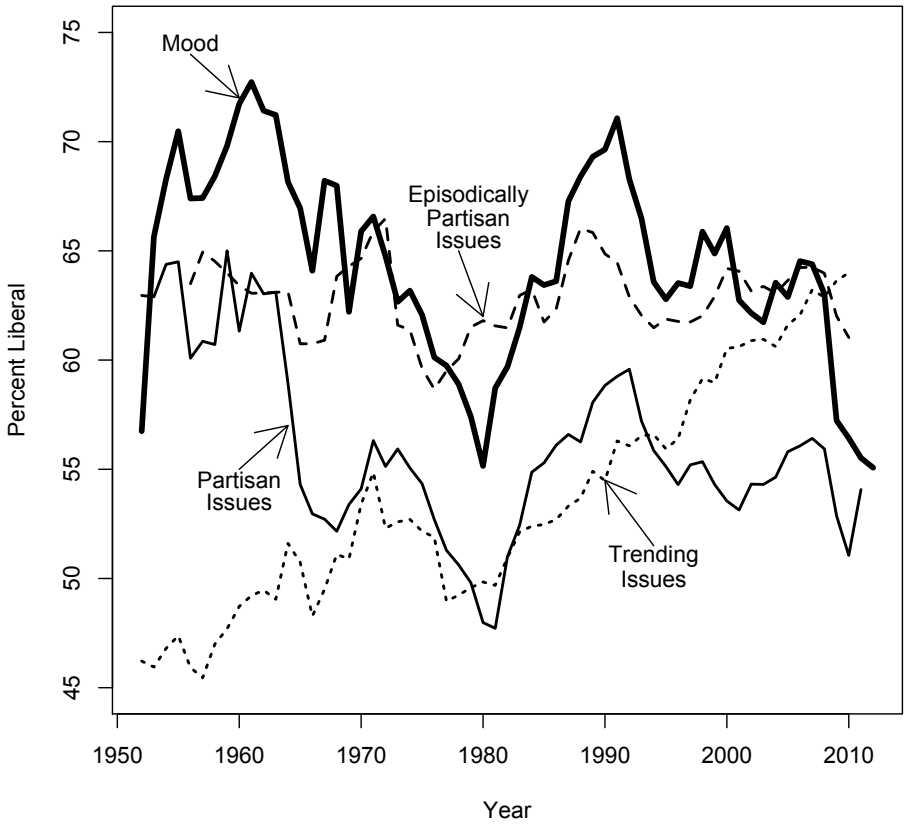

Figure 1: Time Series of Policy Mood & the "Moods" of Tables 1, 2, 3

[13]This stronger than expected correlation is explained by the early portion of the series (see Figure 1), which is dominated by racial equality survey items. Kellstedt (2003) has demonstrated that the racial mood series moved thermostatically similar to policy mood (Stimson 1999) through the 1990s.

What we believed at the outset we now have systematic evidence for: most issues produce thermostatic opinion change. That outcome, we have seen, is consistent with a model in which citizens have fixed absolute preferences. Citizen opinion movements over time show a thermostatic response to the cyclicality of party control of American politics.[14]

But we have seen that not all opinion change is thermostatic and not all opinion change is relative. By highlighting the norm of cyclicality here, we have set up a change of focus away from the normal and typical and towards sets of issues which interest us precisely because their behavior is abnormal. This is where we now shift focus. We turn to some of the handful of issues which are different. Chief among them are issues of equality.

The Evolution of Beliefs about Equality

One particular type of issue stands out in the sea of thermostatic opinion change: equality. That is, racial, gender, and sexual orientation issues generate a different sort of opinion change: absolute opinion change, indicating real shifts in public sentiments.[15]

Figure 2 demonstrates liberal opinion trending in the three equality cases, showing that public support for each of these marginalized groups grows over time. The solid black line represents racial liberalism. While we do find evidence of some thermostatic movement, the overall trend is unmistakable: the public becomes more liberal on racial issues over time. The

[14]This interpretation of opinion change fits hand in glove the cyclical story of Merrill, Grofman and Brunell (2008). Between the two accounts we have evidence that party control is cyclical and that it is cyclical *because* each party's policy actions while in power doom its prospects for long-term control. See also Erikson, MacKuen and Stimson (2002) for a similar cyclical story.

[15]We also investigate the possibility that survey question wording plays a dominant role in producing trending opinion series. In particular, it may be that we only observe thermostatic opinion movement when the questions themselves are worded in a relative manner (e.g., "Should the government be doing more, the same, or less?"). It may also be that in matters of equality opinion, all survey items are worded in an absolute manner (e.g., "Do you believe blacks should have the right to vote?"). However, we observe no evidence of thermostatic (relative) opinion in many policy areas where the question series are themselves relative (e.g., aid to cities, public lands, space exploration; see Table 1.). Perhaps more importantly, many of our survey items for the equality series are relative in frame—yet, we still observe absolute opinion change in the trending opinion series (see Appendix for exact question wording).

same trending movement can be observed for sexual orientation policy mood, represented in the dotted line. In both of these cases, public support grows over time. Gender policy enjoys the highest levels of public support, whereas it was more divisive in the 1970s.

For a more formal statistical inference we estimate trend coefficients in Table 4. There we estimate the trend as the constant term for the first differenced series.[16] All are easily significant. They show an average annual movement in the liberal direction of about four to seven points per decade. Figure 2 makes these similarities and differences clear.

Table 4: Estimated Trend Coefficients for the Three Equality Series

Series	Period	Trend Coefficient	Standard Error	p value
Racial Equality	1947-2010	0.353	0.158	0.015
Women's Equality	1973-2008	0.437	0.217	0.022
Gay Equality	1978-2010	0.680	0.255	0.004

Some portion of the numbers we observe here may be a function of available survey data and question wording. For example, there are dozens of questions in the racial liberalism series, which means we do a good job of capturing the dynamics of racial liberalism. However, many of the survey items are tied to spending preferences (e.g., "Is the government spending enough on aid to blacks?"), which are likely to generate thermostatic movement. Despite this, the overall movement of the racial liberalism series is trending in the liberal direction.

The sexual orientation liberalism series is likewise estimated by a variety of questions, although in this case the questions are mostly tied to actual equality beliefs (and not spending). And again, there is a clear liberal trend in the series, moving from the low 40s in the 1970s to the mid 60s today.

Women's equality liberalism is estimated from three survey items, covering two important

[16] We explored slightly more complicated specifications with ARIMA terms. In the Women's Rights case an IMA(2) model is a better fit to the data. Its estimated trend is .433 with p<.000.

aspects of this movement: women's role in society and gender-based affirmative action. The first item asks respondents to choose the proper role of women on a seven point scale, with one end of the scale end being "in the home" and the other end being "equal to men in the workplace." Responses to this question reach near consensus in favor of equality by 2000.[17] Yet, when citizens are asked to weigh in on affirmative action in hiring and promoting women (with two distinct survey items), responses were less liberal. Covering these distinct, yet central aspects of the women's equality movement ensures we get a good gauge of real preferences. Our data show the same general trend as do other examinations of public support for women's equality over time—steady movement in the pro-equality direction (Sapiro and Conover 2001; Mayeri et al. 2008).[18]

We can also estimate trend coefficients for the Party Control Issues and Episodic Party Control Issues series for an additional, statistical check that what we observe in these equality series is a distinct type of opinion movement. Equality issues have failed our thermostatic test. And, while Figure 1 demonstrates the paths of opinion movement *look* different, an additional statistical test will provide quantitative evidence. Table 5 shows the estimated trend coefficients for the two series Party Control Issues (Table 1) and Episodic Party Control Issues (Table 2). Neither set of issues approach significance.

Table 5: Estimated Trend Coefficients for Party Control & Episodic Party Control Series

Series	Period	Trend Coefficient	Standard Error	p value
Party Control	1953-2011	-0.151	0.232	0.516
Episodic Party Control	1957-2010	-0.046	0.177	0.797

[17]See the Appendix for survey question details and survey item loadings for the three equality series.

[18]We recognize that our survey items do not measure the full range of issues that contribute to attitudes on the concept of gender equality. Readers interested in a more detailed examination of attitudes toward gender equality should consider these two publications as an excellent introduction to a subject that has received a great deal of attention in the literature.

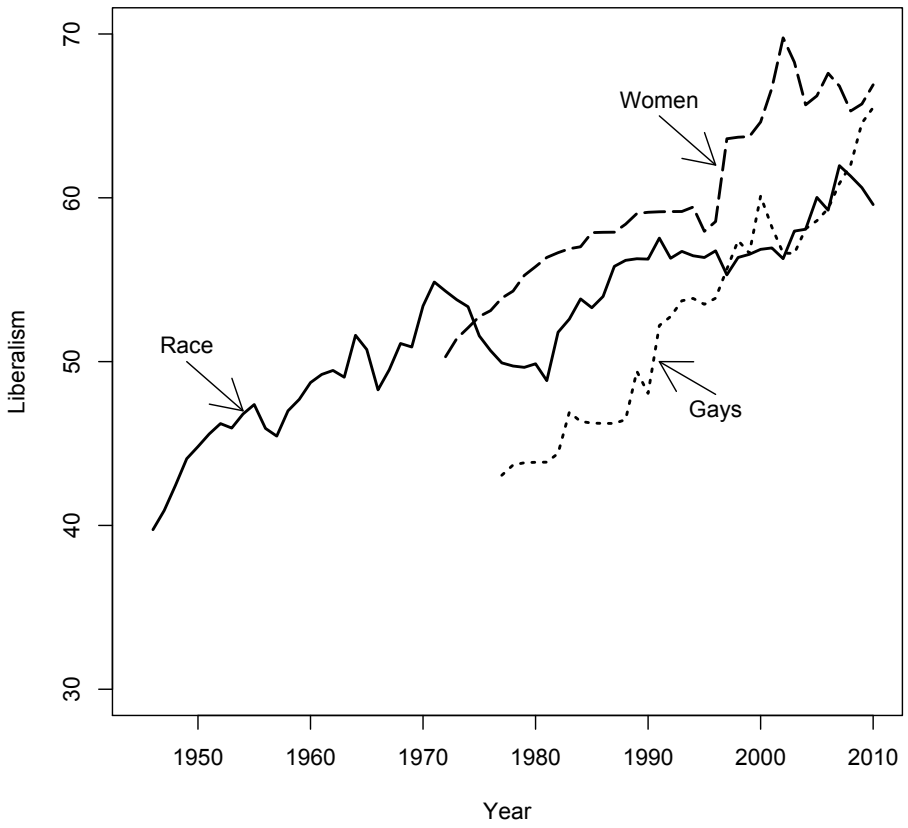

Figure 2: Racial, Women's, and Gay Rights Liberalism: 1950 to 2010 (Source: Computed by authors.)

Substantively, these results demonstrate that the set of issues we have deemed consistently important to the parties, or even *sometimes* important show no sign of trending.[19] They are unaffected, in other words, by powerful stimuli like those that have influenced issues of equality.[20] Thus, we can now say with a large degree of statistical certainty that we have identified three distinct types of opinion change.

Models of Social Change

Absolute opinion change represents an actual change in preferences, not merely a response to changing party control. At the individual level, if we observe one citizen over time, a change of absolute opinion requires a stimulus of some sort. If we observe over-time changes in preferences at the macro level, we may also consider the force of generational change. In other words, we may observe change *within* cohorts and also *between* cohorts. Both are indicative of absolute opinion change.

What we found in the previous section of equality opinion change was one "alternative dynamic" explained in our simulation of opinion change: a trend.

Recall our demonstration of models of opinion change, which we now apply in the arena of social change. Again, we imagine an electorate with preferences scaled from left to right. Again, we ask the electorate relative questions, but this time, questions regarding equality for blacks, women, and gays and lesbians.

Returning to the model of social change, enter the variable of time. Three results are possible.

A Over time, the electorate experiences no change in equality opinion.

[19] We also subject the three equality series taken together (as the "Trending Issues) series presented in Figure 1) to this statistical test. The series is easily significant, $p<0.04$.

[20] Of course, historical events certainly may influence party control issues, but the impact of these stimuli are not lasting.

B Over time, the electorate fluctuates—from more to less desire for equality—perhaps in response to changing party control, or perhaps to another stimulus.

C Over time, the electorate becomes increasingly pro-equality.

From Figure 2 of the three equality moods, we know we are under condition C: over time, the electorate becomes increasingly in favor of equality. But there is one additional element to absolute opinion change: the question of who is doing the changing. Is the growing taste for equality an artifact of generational change? That is, is it caused by between cohort change? Or, are cohorts themselves changing overtime—within cohort change? Or, is it both? We need to understand the moving parts of this condition C.

To answer definitively these questions, we would need longitudinal data (a single question or set of questions covering multiple cohorts and multiple years) with thick responses (enough respondents to separate out the cohorts). Such data would allow us to produce a figure like the simulated image of Figure 3 which demonstrates both types of movement: between cohort and within cohort opinion change in equality beliefs.

Mathematically, Figure 3 suggests two sources of variation that explain over time change in equality beliefs. Cohorts themselves become more accepting of full equality—demonstrated by the upward trending movement of each cohort over time. And, each newer cohort begins at a more accepting point than its predecessor. Change is thus reinforcing, a combination of both types of movement. In other words, if we were able to break apart a single line of a trending equality series (such as the three presented above), we could attribute the trends to two types of change: within cohort and between cohort change.

Our statistical model for estimating the 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. The fixed effects are the intercept shifts of Figure 3 and the linear trend is the over time movement common to all cohorts.

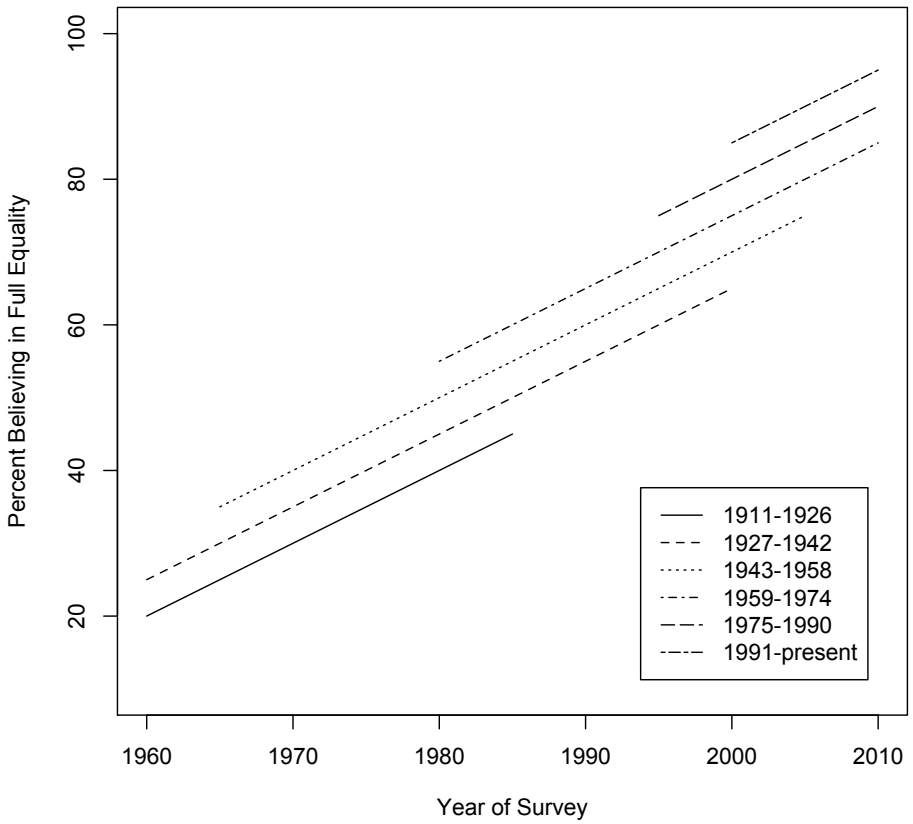

Figure 3: Simulated Figure of Percent of Respondents Believing in Full Equality by Birth Cohort

How Change Occurs

We suspect that both types of change are at work in the cases of racial, gender, and sexual orientation equality. 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 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.

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 which alter the socialization experience of each successive cohort, younger generations become more equality-accepting than their older counterparts.

The two types of change are competing in an intellectual sense. They are alternate explanations of the observed change. But they are complementing in another sense. In order to produce a changed socialization experience for a rising cohort, there must first have been growth of equality-acceptance by older cohorts. Otherwise each cohort would have the same socialization experience and there would be no cohort differences. So while it is natural to ask which of these effects is larger—and we shall do that—it should be remembered that they are complementing. Large scale social change requires both.

Generational Replacement In all three equality areas, we can break down our respondents by cohorts, or generations. The generational replacement hypothesis posits that earlier generations of Americans were socialized into a society where prejudice and bigotry were the norm (Schuman, Steeh and Bobo 1985). Racial and gender hierarchies were clear in the 1940s and 1950s. Gay rights were not discussed. Many in the majority did not think to question these norms. Later generations were socialized in an era where the three marginalized groups were more accepted. Thus, the hypothesis expects that as earlier generations are replaced by newer ones less exposed to overt prejudice, a smaller percentage of the population will be automatically opposed to equality. The young then 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. That means that once a belief in

equality begins to evolve, it is swept along by the tidal force of demography. As generations come and go, the public becomes more and more liberal in its equality beliefs, resulting in a steady, linear process of increased liberalism.

We use survey items in the American National Election Study (ANES) to test the generational change hypothesis. The criteria for item selection are (1) that the item be asked in as many studies as possible (to maximize number of cohorts), (2) that it share the trend of the estimated latent series, and (3) that it have face validity.

In the women's equality case a single survey question spans much of the the entirety of ANES surveys. In the other cases, we have comparable items for shorter spans.

Racial Attitudes We begin with racial equality liberalism in Table 6, looking to a survey item about support for civil rights posed for the studies of 1964 through 1982. The survey item asks respondents if they think that civil rights leaders are trying to push too fast, are going too slowly, or going about the right speed. By combining the responses of "moving too slowly" and "about right" across birth cohorts, we tap into those respondents believing in a critical component of racial equality, civil rights.[21] The responses across birth cohorts are in the second column with the number of respondents in the third column.

To decompose the change of racial attitudes in Table 6 we perform an analysis of covariance to separate out the joint effects of (1) cohort differences, and (2) change within cohorts.[22] We let the racial attitude scores be predicted by cohort dummy variables (in the regression formulation) and by the year of the observed response. What we learn from

[21] We are assuming a linear probability model for our dummy dependent variable here and in the following analysis. Linear is a close approximation for the range of values actually observed. The assumption aids interpretation and comparability with other analyses.

[22] In Table 3 and those to follow we present the raw means by cohort rather than estimated fixed effects. The two sorts of estimates are fundamentally similar, but the means are absolutely meaningful whereas the N-1 cohort effect estimates must be interpreted relative to the equation intercept and an omitted reference category. For background on the issues in decomposing cohort data see Glenn (1976, 2005); Firebaugh (1989, 1990, 1992).

this analysis is that both sources of change are powerful. The message of the analysis of covariance is that within cohort change over time is slightly more powerful than are cohort differences, but both are huge effects. The cohorts are remarkably different, with almost 40 points separating youngest from oldest. Even more so, each cohort becomes more racially liberal (at 1.31% each year) over time, resulting in about a 37 point change, on average, for the 28 year span of the question. This result could only occur if large numbers of respondents of all ages are undergoing individual changes from anti-equality to pro-equality.[23]

Table 6: Support for Civil Rights Movement by Birth Cohort (Percents are those choosing the responses "Moving too slowly" or "About right")

Birth Cohort	Percent Support	N
1959 or later	74.8	1769
1943–1958	66.5	5277
1927–1942	52.5	4919
1911 to 1926	44.7	4689
1895–1910	39.3	2587
Before 1895	35.3	584

Analysis of Covariance

Predictor	F	p-value
Cohort	60.96	<.0001
Year*	945.53	<.0001

* Coefficient on Year, 1.31, standard error, 0.042
Source: American National Election Studies Cumulative File

Gender Equality In Table 7 we evaluate respondent's beliefs about the role of women from an ANES item asked from 1972 through 2008. The responses to the seven point scale range from "women and men should have an equal role" to "women's place is in the home." Again, to get at the generational aspect of our theory, we divide the respondents by birth cohort, shown in the first column of the table. The second column indicates the percentage

[23]See Firebaugh (1989) for a similar conclusion based upon different data.

of respondents in that birth cohort who believe in full equality for women—those answering "women and men should have an equal role." Finally, the last column gives the number of respondents in each cohort. It would be difficult to imagine more fitting results: as the cohorts get younger and younger, the percent believing in full equality grows larger and larger.[24]

Table 7: Belief in Women's Equality by Birth Cohort (Percents are those choosing the strongest full equality pole of the seven point scale.)

Birth Cohort	Full Equality Percent	N
1991 or later	70.2	285
1975–1990	62.3	944
1959–1974	51.0	4564
1943–1958	46.8	8660
1927–1942	37.2	5580
1911–1926	30.0	4731
1895–1910	24.5	1922
1895 or before	21.1	232

Analysis of Covariance

Predictor	F	p-value
Cohort	67.59	<.0001
Year*	338.33	<.0001

* Coefficient on Year 0.626, standard error 0.034

Source: American National Election Studies Cumulative File

Echoing the pattern just seen with racial attitudes, both the cohort effect and the change within cohorts are powerful. The difference between youngest and oldest is almost 50 points. But even more powerful, the analysis of covariance tells us, is the secular change within cohorts. At 0.626 per year, our 36 year span shows an average change of about 22.5 points within each of the eight cohorts. Although the massiveness of this change will not surprise

[24]Mayeri et al. (2008) present a similar analysis of attitudes toward traditional gender roles by birth cohort using data from the GSS. Their findings are very similar to the those presented here.

any who have followed this issue, the contrast with typical public opinion series is quite remarkable.

Gay and Lesbian Issues Finally, in Table 8 we turn to feeling thermometer scores for gays and lesbians to test our generational change hypothesis. To do so, we divide the respondents by birth cohort and display their responses in the second column.[25]

Table 8: Gay and Lesbian Feeling Thermometer by Birth Cohort (Average Thermometer Score)

Birth Cohort	Thermometer Average	N
1991 or later	55.6	514
1975–1900	51.5	1260
1959–1974	42.7	4359
1943–1958	40.3	4922
1927–1942	34.0	2755
1895–1926	32.6	1708
1926 or before	25.4	299

Analysis of Covariance

Predictor	F	p-value
Cohort	39.84	<.0001
Year*	538.21	<.0001

* Coefficient on Year 0.787, standard error 0.034
Source: American National Election Studies Cumulative File

Once again, we find support for the cohort hypothesis: as cohorts get younger, the "warmth" they feel for gays and lesbians grows larger. Cohort differences emerge strongly, with 30 feeling thermometer points separating oldest from youngest. And, fully parallel to the earlier analyses, the change within cohorts, seen in the slope of year, 0.787, is larger still. As with women's equality, the large overtime changes in affect for gays and lesbians will

[25] We have considered the possibility that answering "50" may be evasive instead of neutral. We have done the analysis with those cases treated as missing. It does not appear to make much difference.

come as no surprise to those who track American public opinion. Indeed, the crossover from minority to majority support for gays and lesbians has captured much public attention, most notably following the call for equal marriage rights by President Obama, the first president to publicly do so.

Note also that for all three cases the cohort progression is monotonic. No older group is ever more liberal on any of the three than a younger group. These are the raw data speaking. There is no linear or monotonic constraint. The power is in the reality of cohort and secular change.

Concluding Observations

We did not set out to undermine the thermostatic model of opinion change—nor would we have been successful if we had begun with that goal. Indeed, thermostatic opinion response, we have shown, extends far beyond the narrow subset of categories first suggested by Soroka and Wlezien (2010). Their work demonstrated that the public responds to actual changes in policy spending, a remarkable finding given the general lack of interest we often observe in the American public.

We take these findings seriously, but also suggest the instrument that induces thermostatic opinion change is more simple. With the introduction of a vast new dataset, we find support for our contention that consistent party cues and changes in party control are alone powerful enough to generate thermostatic response.

But, on a larger scale, we demonstrate that although thermostatic response accounts for the large bulk of data we have collected in our comprehensive search, it is not the only path of public opinion change. Shifting social norms on equality issues—the defining social issues of our time—have produced steadily trending series showing greater acceptance for equal rights for blacks, women, and gays. These cases show that individual attitude shifts combined with

generational replacement have dramatically altered the state of public opinion. In these cases, government action has undoubtedly moved in the direction of supporting greater equality over time, but public opinion has not become more conservative in response to government action, as the thermostatic model would predict. On the contrary, public opinion has continued to evolve in the same direction as government action, a fact we associate with a true cultural shift. This is absolute preference change.

Thus, our project demonstrates that the thermostatic model of opinion change is the undergird of the political system, but that a complete theory of public opinion change requires moving beyond the thermostat. We have offered a more comprehensive theory of opinion change, one that accounts for real changes in opinion that are decidedly not thermostatic. We can subsume the thermostat into a broader theory highlighting the critical role of consistent party issue positions.

Changing party control, and the cues the electorate assumes from these shifts, explain the back and forth of policy mood. Where these cues are less clear or unavailable to the public, opinion is not cyclical. And finally, we have demonstrated the presence of another agency, stimuli that activate actual individual-level opinion change and generational change, that influences public opinion. Taken together, our theory offers a more complete version of why public opinion moves as it does.

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