Politics and Media Coverage Shape the Issue Content of the Polling Agenda

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Abstract

When the public speaks, government must listen. Yet the public speaks in many ways and since the 1930s one of the most relied upon forms of opinion expression has been scientific polling. What we know about public opinion thus depends heavily on what precisely polling firms want to know about public opinion. The opinions expressed are typically limited by the questions asked. It is therefore quite important to know when opinions about particular issues are measured. This paper attempts to describe the contents of the *polling agenda* in the United States and examine the contents of that agenda in light of media and political activity, which are theorized to drive pollsters' interests in public attitudes. These expectations are tested by comparing a novel measure of issue-specific polling intensity (the number of polling questions asked on particular issues) against measures of the political agenda in the United States across all quarter-years from 1957 to 2008. The results suggest that the polling agenda is strongly determined by the preceding political agenda. As a result, the polling agenda — and thus our understanding of public attitudes — disproportionately contains information about currently prominent and contentious issues. While this bias results from the aggregation of individually reasonable actions by polling firms, it has implications for research on macro opinion dynamics, issue evolution, and political representation.

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When the public speaks, government must listen. This is the essential premise of democratic governance (Dahl 1971). Indeed, it is a central feature of classic views of democratic governance that the public communicates preferences to government with a high degree of regularity. Anticipating such opinion expressions — the later manifestations of present "latent opinion" (Key 1961; Zaller 2002) — in order to leverage or avoid them is then a central feature of contemporary democratic representation (Mansbridge 2003). Determining what the public thinks has therefore become a major enterprise for governments, politicians, and media. While public sentiment has historically been assessed with a variety of techniques, including the monitoring of the public press, mass demonstrations, and electoral mobilization (Herbst 1993), the rise of the sample survey since the 1930s has meant that the public's views are increasingly defined (and not merely operationalized) as the output of public opinion polls.

Polls represent the aggregation of randomly sampled citizens' views expressed on a fixed set of questions in a private survey interview, the agenda of which is set by those asking the questions. What we know about public opinion thus depends heavily on what polling firms want to know, i.e. what issues happen to make it onto the *polling agenda*. This matters for democratic representation and empirical research on public opinion. The data generated from sample surveys motivates the activities of politicians and parties (see, for example, Jacobs and Shapiro 1994; Rottinghaus 2003; Druckman and Jacobs 2006, 2015). Polling is only one of many forms of opinion expression, but it is one that is prevalent, prominent, and uniquely allows a representative set of the public to speak with equal force. There are thus many reasons why politicians *should* rely on information obtained from public opinion polling but politicians' insight into public opinion may be limited by an agenda set neither by politicians nor by the public, but by the public opinion organizations engaged in the production of sample survey questionnaires.

For researchers interested in the public's aggregate preferences, survey toplines from polls are quite simply synonymous with "public opinion research" (see, for example, Erikson, Wright, and McIver 1989; Page and Shapiro 1983, 1992; Erikson, Mackuen, and Stimson 2002; Brace et al. 2002; Stimson 2004; Lax and Phillips 2009; Soroka and

Wlezien 2010; Mulligan, Grant, and Bennett 2013). The random sampling of individuals from a target population means that sample surveys provide unbiased estimates of macro opinion on whatever opinions are measured. This population representativeness justifies the over-time comparison of cross-sections of individuals and the reasonableness of the claim that political representation can be assessed by comparing opinion measured in polls to the policy activities of government (e.g., Miller and Stokes 1963; Erikson 1978; Gilens 2005; Gilens and Page 2014; Jacobs and Page 2005; Page and Shapiro 1983; Wlezien 1996; Erikson, Wright, and McIver 1989; Hartley and Russett 1992; but see Burstein 2003; Sabl 2015). Yet the representativeness of a poll's sample of respondents says nothing about the breadth of issue opinions any particular poll assesses or the extent to which that set of issues captures enough variation in issues to draw meaningful conclusions about public opinion processes. This matters, in part, because of an apparently substantial disconnect between the types of political issues typically measured by polls and thus used in "macro" opinion research and the issues used in "micro" opinion research to understand individual-level opinion formation and change. The polling agenda places bounds on the set of issues that are eligible for study at any given point in time.

I argue that the intensity of polling on particular issues at a given point in time reflects the preceding political agenda (i.e., the set of issues being discussed by politicians and, in turn, the mass media; see Baumgartner and Jones 1993; McCombs and Shaw 1972). In other words, the public is asked more questions about a particular issue when political attention on that issue is higher and is asked fewer questions when political attention is lower. This expectation is tested by comparing a novel measure of issue-specific polling intensity (the number of polling questions asked on particular issues) against quarterly measures of the political agenda in the United States from 1957 to 2008. The results suggest that the polling agenda is strongly determined by the political agenda. As a result, polling data provide an oversampling of prominent and contentious issues and reflect rather than set the political agenda. While this bias results from the aggregation of individually reasonable actions by polling firms, it has implications for research on macro opinion dynamics, issue evolution, and political representation.

1 The Polling Agenda

The political agenda consists of those issues filling the attention of politicians, interest organizations, and media. Research shows that what is on this agenda shapes the policies enacted by government (Baumgartner and Jones 1993), as well as what elites and the public think are important matters (McCombs and Shaw 1972). Such agendas tend to focus heavily on a small set of issues, such as the economy and foreign affairs, and are defined by punctuation: long periods of issue stasis interrupted by short, intense periods of activity. These punctuations often emerge in response to events or "fire alarms" that force previously non-salient topics onto the political agenda and lead to sizable changes in the content of policy.

Normatively speaking, the political agenda should reflect the public's concerns: those issues seen as important by the public should be the issues at-focus in policy-making activities. Increases in public concern about a topic should escalate government attention (even if that attentions leaves policy unchanged) and decreases in public concern about a topic should lead government to attend to other matters. Much empirical research on political representation expects a close correspondence between public preferences and government policy, so this is simply a modest extension to expect the issues debated by politicians to mirror the issues of concern to the public. Yet we already know from considerable evidence on media agenda-setting that what the issues rated as important by the public on surveys often reflect the issues more heavily covered by mass media (McCombs and Shaw 1972; Iyengar and Kinder 1987; Miller and Krosnick 2000; van Aelst and Walgrave 2011). In other words, the public's apparent agenda *reflects* rather than *drives* the broader political agenda. Public concerns appear to be at least partially endogenous to preceding government and media activity.

Often lost in discussions about political and media agenda-setting and the opinion–policy linkage is the reality that the public does not often speak directly. While public opinion can be expressed in many ways (e.g., through protests, letter-writing, donations, phone calls to legislatures, and so forth), since the 1930s the public speaks primarily

through one channel: the public opinion poll. Opinion surveys are distinct from other forms of opinion expression in that they are both private (i.e., they reflect opinions expressed in a confidential conversation) and are heavily mediated. Through quantification and representative sampling, the sample survey has also attained an unparalleled degree of legitimacy in claiming to represent the public as a whole (Herbst 1993), but see (Berinsky 2004).

In most opinion surveys, members of the public are asked a finite set of closed form opinion questions to which they respond. Whatever priorities, concerns, or positions are expressed in the survey interview are done in large part in response to an agenda already predefined by the polling firm. This structured, mediated form of opinion expression means that the public agenda, as understood through the lens of opinion polling, is only observed conditional on the topics of concern in the *polling agenda*. By polling agenda, I refer to "a ranking of various issues about which organizations that conduct surveys ask questions" (Dearing 1989, 310; see also Althaus and Oats-Sargent 2004). The measured public agenda is thus first and always a response to the polling agenda. The public agenda itself may differ from the observed public agenda but it would be difficult to characterize that agenda or the correspondence between the measured public agenda and the "true" public agenda.[1] Indeed, the lack of correspondence is likely to be high, given evidence of the sensitivity of responses to "most important problem" questions (RePass 1971) to question format (Schuman, Ludwig, and Krosnick 1986) and wording (Niemi and Bartels 1985; Krosnick 1988; Yeager et al. 2010; Wlezien 2005; Jennings and Wlezien 2011).

But my objective here is not to characterize the public's concerns (as measured in polls or otherwise) but rather to examine the polling agenda itself. The content of the polling agenda matters because it provides the basis for understanding public opinion and public priorities. Through the survey interview, researchers and governments can only know what the public thinks about the matters that are asked. As such, any possibility for representation or the empirical study of representation requires insight into what

[1]Some strategies for doing so are obvious. For example, one could measure various forms of organic public expression (e.g., rallies, letters to the editor, social media content, etc.) but none of these are representative of the population as a whole. Similarly, one could survey the public and rely on open-ended questions but such techniques are sensitive to response biases, including unit and item nonresponse.

data are available and what precisely those data can reveal. Indeed, it is moments of increasing and decreasing public concern about an issue that are normatively expected to drive changes in government activity, yet the existence of a polling agenda means that observers are only likely to capture changes to issues that are already measured (i.e., before they become politically important) and capture concern about topics that have already been deemed by polling organizations to be sufficiently interesting to measure. This paper therefore asks: When are opinions about particular issues measured? And what seems to explain the contents of the polling agenda?

1.1 Why Should We Care About the Polling Agenda?

The polling agenda plays a central role and often unavoidable role in political science research. Because the polling agenda determines the availability of much public opinion data, researchers are in large part constrained in their ability to understand public opinion by data producers (i.e., the organizations setting the polling agenda). Such constraint is unproblematic if the interests of both parties are aligned; if polling firms and other public opinion researchers agree on what information is valuable to know, then the data produced match the data demanded.

On the other hand, if the users of public opinion data in secondary analyses (i.e., the vast majority of academic research on public opinion, political psychology, and representation) want to measure public opinion toward different ends than polling firms, polling data may not actually be suitable for those purposes. To examine whether there is a disconnect it is necessary to characterize what kinds of public opinion data are of interest to academic researchers and compare this to the data that emerges from the polling agenda. To characterize academic demand for public opinion researcher, I focus on two prominent areas of study: (1) public opinion stability, and (2) representation via opinion–policy congruence.

Opinion Stability. Are public opinions stable? Innumberable pages, hours of research effort, and scholarly careers have been expended on this question since at least the early use of ANES data by Converse (1964). Among the most notable works in the

area, Page and Shapiro (1992) and Erikson, Mackuen, and Stimson (2002) have suggested — in different ways — that opinion (in its macro sense) is stable whereas others, like Zaller (1992), have suggested that opinions (in the micro sense) are not always stable. Empirical test of stability pivot largely on the type of data collected — that is, whether it is individual-level panel data or aggregate survey marginals (Druckman and Leeper 2012). But even within the macro perspective, the two seminal works have taken distinct approaches: Erikson, Mackuen, and Stimson adopt methods from Stimson (1999) of modeling stability according to systematically sampled government spending questions (aggregated into a single time-series), while Page and Shapiro sample questions on specific political issues, examining only issues where a question is asked more than once and examine those issues in isolation.

This choice — of systematic, purposive sampling of particular types of questions versus ad-hoc selection of questions not systematically asked over time — reflects seemingly minor analytic decisions, but selects upon unique subsets of the population of questions that could be asked (and potentially were asked). It is this subtle analytic choice — the subsampling of the nonrandom sample of political opinions actually asked — that this paper interrogates. Issues and opinions on issues may differ from one another in potentially unobservable ways: opinions on some issues may be more stable than opinions on other issues (e.g., due to differences in value-relevance, population-wide differences in attitude strength, etc.). Similarly, time periods at which opinions are observed might differ from one another: some periods may have greater stability (e.g., due to the absence of relevant stimuli; Druckman and Leeper 2012) than other periods (e.g., those marked by rapid, exogenous shocks to the political system).

To assess the extent to which public opinions are stable requires observing a representative set of all issue opinions (across known and unknown issue variations) at a representative set of points in time (again, across known and unknown periodic-specific variations in stability). Analysis of the entire population of hypothetical question-time observations, or a random sample thereof, can answer the question of stability on each issue and on political opinions. Study of macro stability, however, does not — and cannot

— obtain that population or a representative sample thereof. The (publicly available) sample of survey question-times is a systematic sample shaped by polling organizations and the extent to which that sample reflects a bias toward including opinion-times that tend to be stable or unstable over-time means that our ability to answer the question that opened this article is handicapped and the answers we might find systematically biased.

Opinion-Policy Congruence. Does policy reflect public preferences? When public opinions change, government is supposed to act in response. Incongruence between public preferences and government action is often seen as the ultimate violation of representative ideals.[2] The evidence for such congruence is, however, somewhat meager (Achen 1978; Page and Shapiro 1983). Measurement of opinion-policy congruence — and congruence per se — depend on the assumptions that public opinion is knowable and, given that, it is readily observable.[3] As in the study of public opinion stability, empirical research on representation requires observing not only a set of question-times (i.e., measures of issue-specific opinion at different time periods) but also corresponding measures of legislative activity, or at least elite policy preferences, in order to assess opinion-policy congruence. This compounds the problems of assessing representation because both question-times and legislative activity may be nonrandom. Indeed, it is well-known that the legislative agenda (e.g., the floor agenda in the U.S. Congress) is a product of a process of strategic interactions and does not reflect a comprehensive examination of elite ideology or policy preferences (Snyder and Groseclose 2000; Cox and Poole 2002; McCarty 2002; Cox and McCubbins 2002) and the problem with such measures is not overcome by relying on outside ratings of legislative behavior (Snyder 1992).[4]

[2]Though the egregiousness of this violation depends upon the observer's stance in debates over the meaning of "representation" (see Pitkin 1967; Mansbridge 2003).

[3]These assumptions are in large part uncontroversial when one's objective is to make descriptive assessments of the public's views on particular questions at any given point (generally, through sample survey measurement of opinions and the aggregation thereof). Yet expectations for representation include a time-dynamic element: not only are policies supposed to reflect absolute levels or valence of mass opinion but government is also expected to be responsive to changes in opinions (Stimson, Mackuen, and Erikson 1995). Whether this time-dynamic "responsiveness" is feasible — and further whether it could even be observed — therefore stretches the assumptions necessary to make meaningful statements about public opinion.

[4]A nonrandom set of bills are placed on the floor agenda for votes, thereby biasing what votes interest group can rate and, in turn, estimates of ideology derived from those ratings. Polling of nonrandom question-times is similarly problematic, though the direction of the bias (toward stability) seems to be predictable.

The result is an effort to analyze correlations between two systematic subsamples of opinion-times: one that is determined by factors within and without legislative institutions (the legislative agenda) and another that is determined by the interests of polling organizations (the polling agenda). Opinion-policy congruence can only be assessed on the subset of opinion-times that happen to be observed on both agendas simultaneously. Opinion-times on the polling agenda are not analyzed if they cannot be matched to opinion-times on the legislative agenda, and vice versa. Unless both the polling agenda and the legislative agenda are representative of the population of all opinion-times, any analysis of the resulting intersection of the two agendas will reflect the biases present in both. Whether opinion and policy (or elite preferences) are indeed congruent will hinge on whether polling organizations and legislatures prioritized the same issues at the same times. That seems likely to occur only when issues are highly salient or important, which may over- or under-estimate correspondence. Given extant research suggests greater governmental responsiveness to public opinion on highly salient issues (Mortensen 2006), this likely means that the polling agenda (and analyses of its relationship to legislative activities) likely overstate congruence because they only observe these issues that are sufficiently salient to appear on the legislative and polling agendas simultaneously.

In brief, the polling agenda matters for both political and scholarly reasons. The political role of the polling agenda means governments and politicians have a potentially narrow and heavily mediated understanding of public preferences. The scholarly role of the polling agenda means that political scientists' ability to understand fundamental questions about politics depends exclusively upon observation of a nonrandom subset of possible time-period observations of opinion. As such, when political scientists and politicians speak of public opinion, they in fact speak only of the opinions deemed sufficiently important to have been observed and those opinions may differ from the unobserved opinions or other time period observations of the same issue opinions. The secondary use of the polling agenda to understand public opinion, its origins, and its consequences may be heavily constrained and indeed biased by the factors that drive the initial collection and publication of public opinion data.

1.2 What Gets On The Polling Agenda?

There is limited previous research on the polling agenda. Dearing (1989) examined how polling organizations measured public attitudes toward AIDS between 1981 and 1987 (see also Rogers, Dearing, and Chang 1991) and found that portrayals of AIDS in media shaped how the issue was measured in surveys. Althaus and Oats-Sargent (2004) compared the contents of CBS/*New York Times* polls from 1981 to 1987 to CBS *Evening News* coverage over the same period. They find that polling is driven by news coverage, but not the reverse. Both studies suggest a top-down relationship between the political agenda and the polling agenda: politics drives rather than responds to public opinion.

Why might this be the case? An individual poll is the result of an individual polling firm's decisions about what attributes to measure about a chosen population. This, of course, is driven by a mix of polling firms' subjective perceptions of what is interesting and/or important as well as demands for particular types of public opinion data. If a new immigration issue is being debated in Congress and a news agency intends to report on the matter, it is reasonable to expect that the in-house polling team would measure opinion on that issue so that the polling information can be used in reporting. Similarly, during political campaigns polling firms have incentives to produce horserace information at the expense of other polling issues. Similarly, Groeling and Kernell (1998), show that network news channels selectively report on opinion polling, which in turn suggests that polling firms — if they are motivated by newsworthiness — will selectively collect information about the public's opinions.

Given the finite (indeed, highly limited) space within a survey interview, clear incentives are to produce data that have immediate utility. If the political agenda incentivizes the production of particular polling information at any given point in time, then individual polling firms should respond to those incentives in a relatively straightforward uniform manner. They will all converge on producing the content perceived to be initially useful. As such, the broader political agenda will drive and thereby limit what information polling firms generate as they seek to obtain maximum immediate benefit for their

generated data in the immediate term.

What does this mean for the collective product of individual firms' polling efforts? The resultant collective polling agenda should be systematically biased toward coverage of political topics that have immediate concern to media and policymakers. Similarly, the polling agenda will undersample issues for which there is little immediate demand for data, including those that lack national or international scope, those on which there is complete or near-complete public consensus, and those issues not yet seen as politically important. Among these, local issues are unlikely to ever be a major component of the national polling agenda because the generated data on these topics have more limited value than national data and the cost of collecting state-representative data is unlikely to redeemed in value of the resulting data. Next, issues on which the public is known (or thought) to have reached a consensus are unlikely to ever occupy the polling agenda. For example, the issues of human slavery, polygamy, universal alcohol prohibition, and the racial segregation of movie theaters are all issues that likely have wide public consensus in the 21st Century and thus there is little reason for polling firms to continuously measure attitudes on these matters. Finally, issues not seen as politically important are likely to take up less space on the polling agenda lest those questions take space away from more pressing and high-profile matters.

Consequently, public priorities are unlikely to drive the polling agenda. The issues deemed important by the public will only shape the questions asked by polling firms if those priorities are subsequently deemed politically interesting by media and/or elites. Thus, there is little reason to think that the top-down dynamics observed by Dearing (1989) on the issue of AIDS should operate any differently on other issues or on the polling agenda as a whole. The normative implications of that top-down process are obvious: citizens' opinions are measured to rationalize elite concerns rather than provide an exogenous input to the political process, overturning the fundamental premises of most theories of democracy.

Yet these patterns of oversampling some issues and undersampling others are not irrational or unreasonable for individual firms, nor perhaps for the collective enterprise of

polling. In fact it would be strange to expect polling firms to produce data that they rationally have no immediate incentive to collect. While academic researchers might desire a long, consistently periodic time-series of opinions on a particular issue, academic use of polls is at-most a secondary usage of data. Because of this, there is no reason to think that the polling agenda will ever constitute an unbiased sampling of issues. As such, we have to be skeptical about what the polling agenda can tell us about public opinion in general. Consider, for example, the researcher interested in studying representation who compares opinions measured in polls to the voting behavior of members of Congress. Congruence between opinion and voting behavior can be construed as evidence of representation. But what of settled, consensus issues? If nearly 100% of the public opposes human slavery and so too do 100% of members of Congress, then there is perfect representation of the public's views on that issue in national policymaking. But the polling agenda creates a missing data problem: without demand placed on polling firms to measure public opinions on human slavery, the researcher has no data with which to assess opinion–policy congruence. The smaller set of issues for which polling firms have data-generation incentives are likely to be those that are more contemporarily contentious and thus bias the researcher's assessment of overall opinion-policy congruence in unknown ways.

This tension between the polling firms' incentives, which generate the polling agenda, and the researcher's demand for an unbiased sampling of public opinions on an unbiased sampling of issues is precisely the reason why dependence of the polling agenda on the political agenda is problematic. Researchers need opinion data and turn to the seemingly obvious source of those data, but the structural incentives that underly the data-generating process might systematically produce data that the researcher would not have collected had they been the original data producer. These data still have value, but the utility of polling data for measuring, for example, macro opinion dynamics and representation depends in large part on the unbiased sampling of issues. If the polling agenda, due to its dependence on the broader political agenda, does not supply such a sample, then these data are less than ideal for use in academic research.

As Spencer (2012) has shown, "To design data programs to maximize benefit,

we need to pay attention to how data are actually used" (572). Polling firms generate data to maximize their own benefits from those data, not necessarily to fulfill the needs of academic researchers. Yet if firms generate data that maximized value to academic researchers, they may very well obtain suboptimal data for their own purposes. As such, the polling agenda is an unavoidable part of using public opinion data in secondary analyses and is a topic that merits further attention. Until we understand what is on the polling agenda — that is, whether the polling agenda is biased toward issues previously salient on the political agenda — it is impossible to assess the usability of polling data for academic research on public opinion.

2 Data and Methods

To assess the relationship between the polling agenda and the political agenda requires longitudinal data on both. Reasonable measures of the political agenda are well-established (see Baumgartner and Jones 1993) and are discussed below. Measuring the polling agenda, however, is more difficult. Recall that the polling agenda is defined as the intensity of attention paid by pollsters to particular political issues and, consequently, the volume of polling information polls produce about those issues. While measuring the intensity of pollsters' interest in particular issues at particular points in time is quite difficult, measuring the polling agenda by way of the volume of polling information is surprisingly simple. Past research has measured the polling agenda either as the number of polls (Rogers, Dearing, and Chang 1991) or as the number of questions (Dearing 1989) on a specific issue. To better capture variations in the polling agenda that occur within-polls, I adopt the latter approach.

The analysis here expands on these approaches with a novel, nearly comprehensive measure of the polling agenda derived from data stored in the archives of the Roper Center for Public Opinion Research at the University of Connecticut. The Roper Center archives contains archived opinion data from 50 countries, including data produced by most major polling firms in the United States including the Gallup Organization, the Pew Research

center, *The New York Times*, *The Wall Street Journal*, *The Washington Post*, and all three major network television news agencies, among others.

To measure the polling agenda, the Roper Center's iPOLL search utility was used to gather data on the number of questions stored in the Roper Center archive. The number of questions was extracted for every quarter year from 1940 to 2012, providing coverage of nearly the entire history of polling in the United States. Furthermore, to obtain issue-specific measures of the polling agenda, this process was repeated for each of the 103 issue areas used by the Roper Center to categorize questions. Given a steady increase in the overall volume of polling during the study period, this process was also repeated by examining only questions asked by the Gallup Organization in order to provide a single series that had less of an over-time trend. This also allows for an examination of a firm-specific polling agenda that constitutes a sizable portion of all questions asked by all firms, especially in the early years of polling. Thus two quarterly, issue-specific measures of the polling agenda are provided covering 72 years. These data were then further aggregated by relabeling the 103 Roper Center issue categories according the "Major Topic" categories used by the Policy Agendas Project (PAP). In some cases, multiple Roper Center categories were combined (via a simple sum) and in some cases entire Roper Center categories were dropped due to their failure to map onto an obvious PAP code. The Appendix includes the crosswalk used to map the Roper Center codes to the PAP codes.

Before proceeding, it is important to highlight two possible weaknesses in these data. First, this collection does not represent the *population* of public opinion data in the United States. For example, data from the Harris Poll is held elsewhere at the University of North Carolina–Chapel Hill's Odum Institute. That said, it contains the bulk of polling data generated in the United States from the beginning of public polling until the present. One could add additional counts of polling questions from other sources to the measures derived from iPOLL, but the return on that costly effort is ambiguous. Second, these data are not exclusively opinion questions. Rather, iPOLL searches all types of questions available in the Roper Center archives, including factual knowledge questions,

measures of beliefs, etc. A narrower count of opinion polling would reflect a subset of the questions measured here. But the use of non-opinion questions is unproblematic for assessing the polling agenda because these other types of questions reflect interest on the part of pollsters in particular issues.

Measuring the political agenda is simple, given three well-established measures produced by the Policy Agendas Project (PAP). The PAP datasets reflect various measures of the political agenda coded in 19 major topic categories. First, the *New York Times* Index data measures coverage of policy issues in *The New York Times* at the quarterly level for the period 1946 to 2008. Second, the Congressional Bills dataset contains all bills introduced into Congress between 1947 and 2012 (Adler and Wilkerson N.d.). These data were then aggregated (as counts) to the quarterly level. Third, the PAP Most Important Problem dataset, which aggregates the Gallup Organization's measures of the public's most important problems annually for the period 1946 to 2012.

Combining these measures with the polling agenda measures produces a complete time-series dataset for 208 quarter-years between 1957 and 2008. Thus while the polling agenda series extends further into the past, we rely only on data since 1957 due to the availability of other series necessary for the analysis. The Appendix includes graphs of each time series measure of the polling and political agendas for each issue topic included in the analysis (using a one-year moving average and a simple rescaling to smooth the displays).

Complete polling agenda data are available for almost all of the PAP major topic areas. Specifically, categories 1–20 are fully represented, though category 21 ("Public Lands and Water Management") lacks sufficient data to be included. The other PAP issue codes address other (mostly non-political) miscellany and are therefore excluded.

The plan of the analysis is quite simple. First, I use data from the complete Roper series and Roper's Gallup series to characterize and describe the contents of the polling agenda over the entire period from 1940 to 2012. Second, using the PAP series as measures of the political agenda, I rely on basic graphical and regression analyses to assess to extent to which the polling agenda is affected by the political agenda. Finally,

I compare the complete Roper series and the Gallup series to assess the extent to which an individual polling house's agenda moves in parallel with the collective polling agenda as a whole.

3 Results

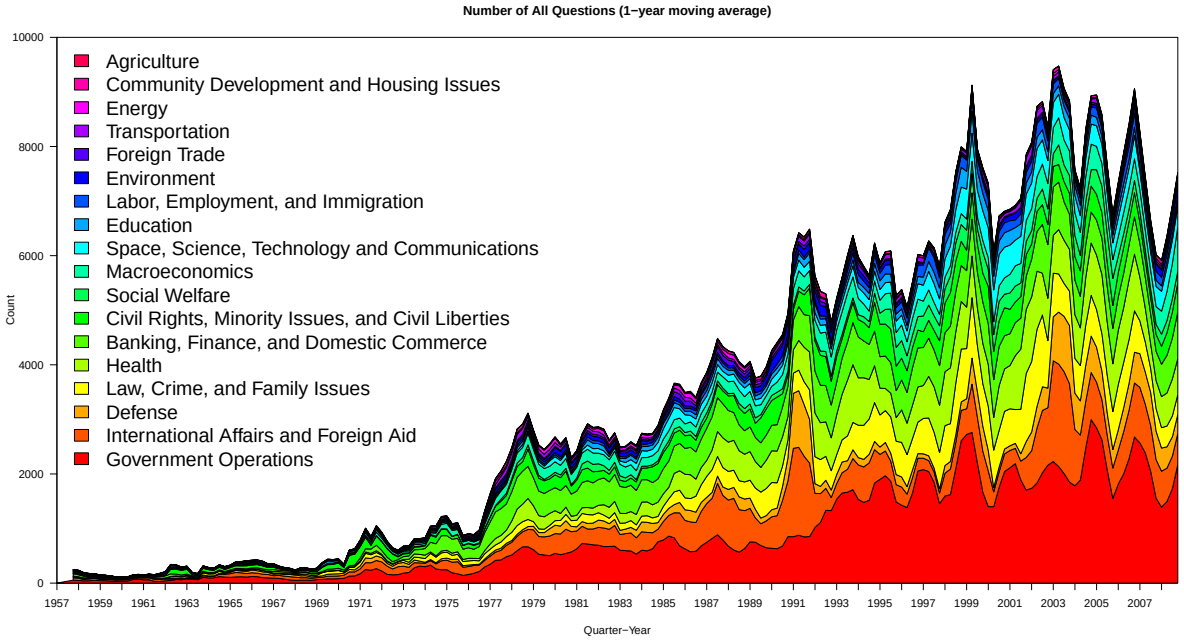
The upper panel of Figure 1 displays the total counts of polling questions in the iPoll database by issue category in each quarter-year. The lower panel shows counts only for Gallup. Both panels show that there have been increases in the total size of the polling agenda over time due to both increases in the number of opinion-time observations by each firm and in the number of firms. The isolation of Gallup is useful as it contributes as much as 10% of all items on the U.S. polling agenda.

Both plots make clear that the absolute size of the polling agenda has increased from a mere 273 questions in the first quarter of 1957 (of which 173, or 63.4%, were Gallup questions) to 7864 in the last squarter of 2008 (of which only 662, or 33.0%, were Gallup questions). The polling agenda reached its largest number of questions in the first quarter of 2003 with a total of 12,720 questions due to a surge in questions about "International Affairs and Foreign Aid" (PAP code 19). In this quarter there were fully 3789 questions asked in this category, reflecting the beginning of U.S. involvement in Iraq in March 2003. The largest size of the Gallup agenda came earlier, in the first quarter of 1991. This was again attributable to a surge in international affairs questions (778 total) related to U.S. involvement in Iraq during the First Iraq War (the Gulf War).

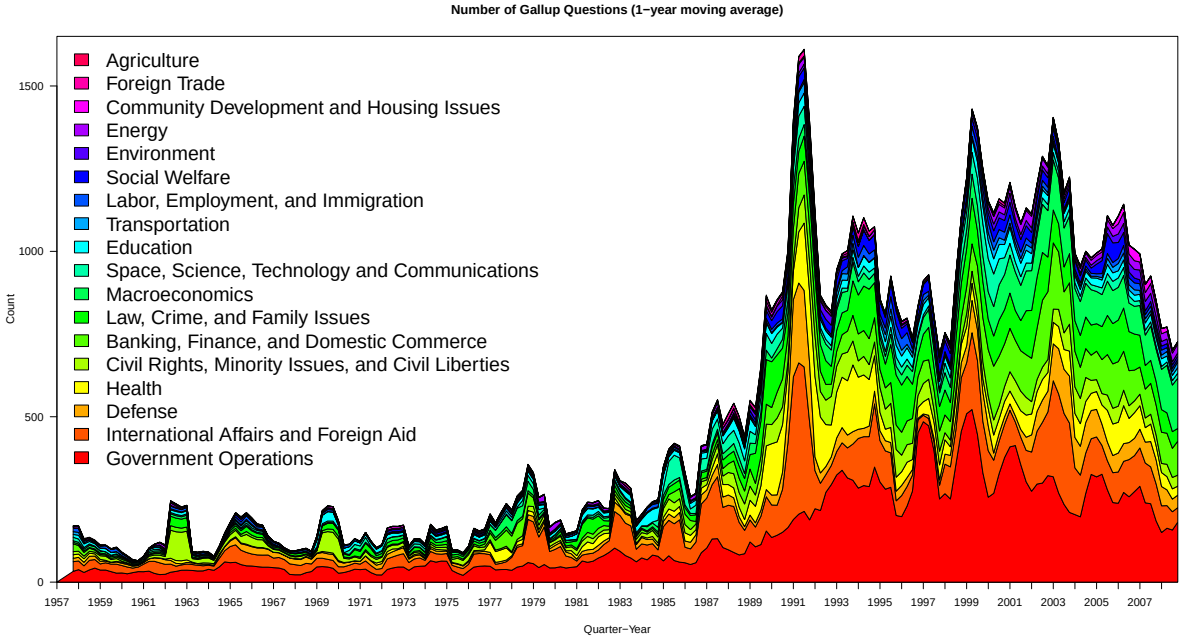
While foreign affairs questions appear to contribute the most to the volatility in the size of the polling agenda, questions about "Government Operations" were consistently the largest single topic on the polling agenda. This PAP category is broad and was mapped to a wide array of questions stored in the iPoll databank including those related to elections, Congressional approval, and the cost of government.

This dominance of governmental operations questions becomes quickly apparent in Figure 2, which displays the same data as Figure 1 but as time-specific proportions rather

Figure 1: The Polling Agenda, 1957–2008



(a)



(b)

Note: Panel (a) shows counts of questions by issue category in each quarter-year for all polling firms. Panel (b) shows counts for Gallup only. Both figures display a one-year moving average in order to remove quarterly noise.

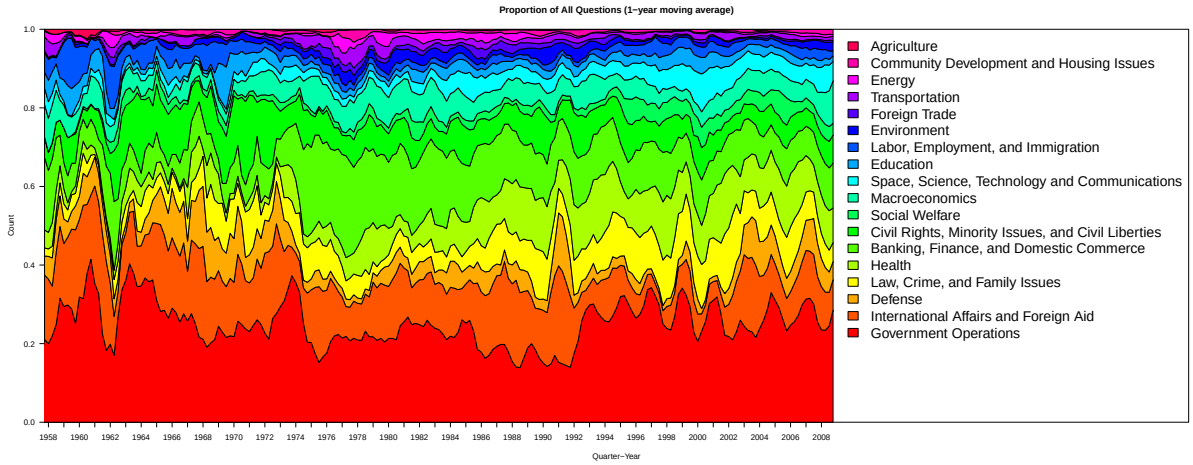
than counts of questions. This helps to address the substantial increase in the number of items on the polling agenda over time, thus making the relative size of issue topic categories clearer.[5] What is striking about both the top panel (showing all questions) and the bottom panel (showing only Gallup questions) is the stability of the issue topic series. The relative size of different issues on the polling agenda has remained relatively static for more than fifty years, despite substantial changes in the public's preferences on a host of contentious issues and dramatic changes in government activity.

While the Gallup series shows more volatility, there appear to be no topic categories that have substantially changed their ranking on the agenda. Indeed some issues obtain short-lived periods of high salience (e.g., banking and finance during the 1980s, foreign affairs during times of war), issues retain their relative importance to polling organizations at all points in time. The Gallup panel shows how an individual firm's agenda is subtly altered at particular points in time. For example, education (the turquoise series) is sporadically salient, energy becomes salient during the late-1970s oil crisis, healthcare during the early 1990s, and macroeconomics emerge as important in the lead up to the recent global financial crisis. Despite these moments of altered salience, numerous topics never dominate the polling agenda, including agriculture, transportation, energy, foreign trade, and the environment.

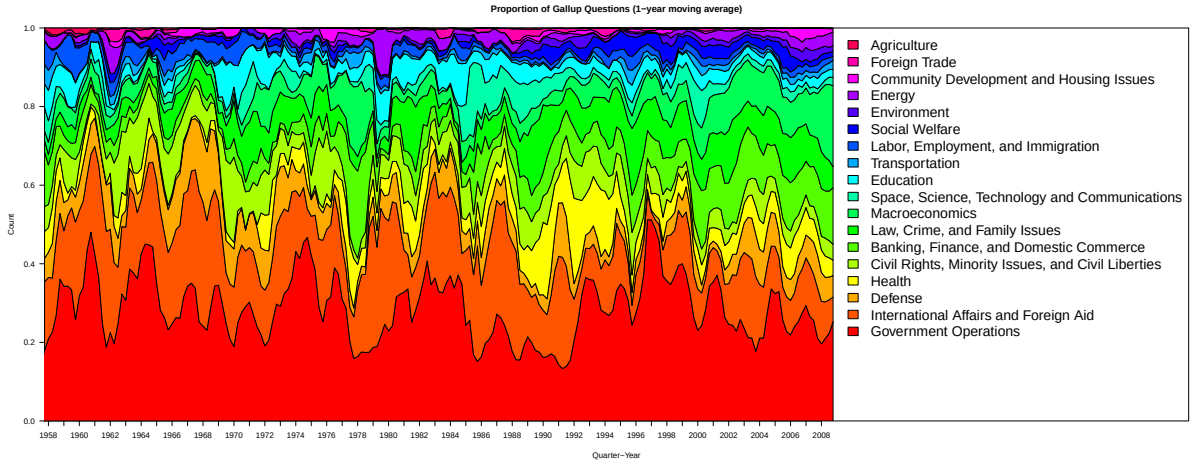
We can examine such over-time trends with a simple modeling strategy that regresses the size of the issue-specific polling agenda (i.e., the number of questions on a given topic) on a simple time indicator variable. The coefficient on the time variable indicates any increase or decrease in the number of questions over time. Because the size of the total polling agenda has increased over time, an alternative strategy is to use the proportion of the total agenda focused on each topic as a dependent variable. Both strategies are shown in Figure 3. The upper panel shows estimated time trends on question counts, all of which are non-negative given the increasing size of the polling agenda. The lower panel shows trends in proportions, which vary from negative to positive given that the total size of the agenda has been fixed. Each figure shows results separately for

[5]Note that these series display one-year moving averages to remove random noise from the plots.

Figure 2: The Gallup Polling Agenda, 1957–2008



(a)



(b)

Note: Panel (a) shows the proportion of all questions in each issue category at a given quarter-year. Panel (b) shows counts for Gallup only. Both figures display a one-year moving average in order to remove quarterly noise.

the full agenda and for Gallup questions only.

The upper panel shows that while some issue topics have been the subject of rapidly increasing attention (e.g., government operations), the total size of the polling agenda has remained relatively small in many policy areas (e.g., ,agriculture, health, civil rights, and macroeconomics). A unit increase here would indicate one additional question being asked within a topic area each quarter (over the full 208 quarter-years in the dataset). This means that while the polling agenda in 2008 included well over 2000 more questions about government operations than it did in 1957, the agenda saw an increase of less than 200 additional questions about macroeconomics over the same period.

The lower panel conveys a perhaps more interesting pattern given that it controls for the size of the total polling agenda. Over time, the proportions of the polling agenda dedicated to government operations, international affairs, foreign trade, science, and defense have all increased. The proportion of the agenda dedicated to the modestly changing topics noted above (macroeconomics, civil rights, health, and agriculture) have actually decreased over time. For most of the issue areas, however, there has been essentially no positive or negative trend (which is consistent with the visual impression suggested by Figure 2). And, of course, the overall size of these effects are quite modest with the absolute size of the quarterly effects amounting to less than a 0.1-percentage point change in agenda composition.

Strikingly, however, trends in the Gallup agendas have not necessarily mirrored trends for the collective polling agenda as a whole. For example, the proportion of the total polling agenda dedicated to international affairs and foreign aid has increased over time, but the proportion of Gallup questions on the topic has actually decreased markedly. Similarly, the proportion of questions on the total polling agenda dedicated to macroeconomics have decreased, even as Gallup has increased the proportion of their polling dedicated to the topic. Gallup also deviates markedly from the total agenda with respect to government operations, foreign trade, defense, banking, social welfare, law, environment, and health (i.e., on 9 of the 18 policy topics). This suggest a need

for further research into how individual polling firms make decisions about how much attention to expend on specific topic areas.

While the contents of the polling agenda appear to have changed very little over the last half-century, except in a few policy areas, it remains to be seen to what extent quarterly variations in issue salience on the polling agenda reflect variations in the salience of those issues on the political agenda. To test for those variations, panel regression is used to assess the influence of the political agenda on the contents of the polling agenda. Specifically, the following model is estimated:

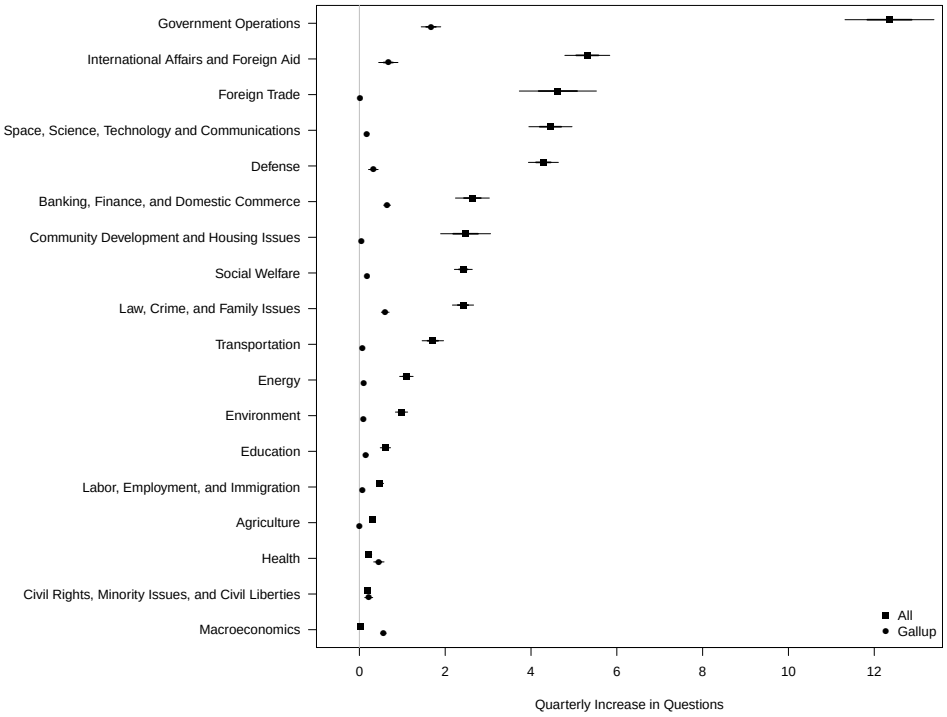
$$\begin{aligned} \text{Polling Agenda}_{j,t} = \beta_{0,j} &+ \beta_1 \text{NYT}_{j,t} + \beta_2 \text{NYT}_{j,t-1} + \beta_3 \text{NYT}_{j,t-2} \\ &+ \beta_4 \text{MIP}_{j,t} + \beta_5 \text{MIP}_{j,t-1} + \beta_6 \text{MIP}_{j,t-2} \\ &+ \beta_7 \text{Bills}_{j,t} + \beta_8 \text{Bills}_{j,t-1} + \beta_9 \text{Bills}_{j,t-2} \\ &+ \beta_{10} \text{Quarters Until Election}_{j,t} + \beta_{11} \text{Year} + u_{j,t} \end{aligned} \tag{1}$$

The outcome variable is the proportion of the polling agenda dedicated to each topic. Measures of the political agenda include *The New York Times* media coverage, the proportion of the public reporting the issue areas is the most important problem, and the total number of bills introduced in Congress. An additional control for the number of quarters until the next general election addresses possible periodicity in the series.[6] Two approaches are used: one is a pooling model and a model with issue fixed effects.

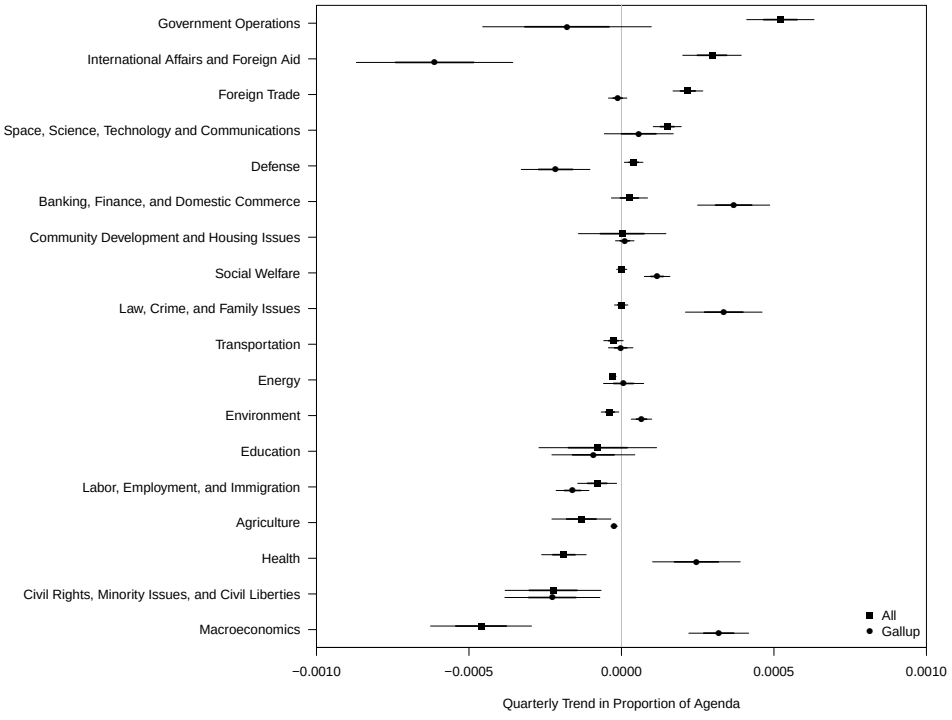
The results are shown in Table 1. Columns 1–2 display results for the total polling agenda, using the pooling and fixed effects approaches respectively, and Columns 3–4 display analogous results for the Gallup polling agenda measure. The results are similar for both outcome measures and relatively similar across estimate strategies. The importance of the topic area as measured by the MIP index and the degree to which an issue was covered by news media are both associated with higher salience on the polling agenda. Political attention, as measured by Congressional bill introductions, however is associated

[6] As an alternative estimation strategy, separate time-series regression are estimated for each issue topic (rather than a panel approach), thus producing a set of 18 regression equations. These results are shown in Appendix C.

Figure 3: Issue-Specific Trends in Question Content, 1957–2008



Note: Points indicate the number of additional questions on the polling agenda in each topic area by quarter, based on a linear regression of number of questions regressed on a simple time trend indicator, separately for each issue topic.



Note: Points indicate the time trend in proportion of questions on the polling agenda in each topic area by quarter, based on a linear regression of proportion agenda dedicated to each issue regressed on a simple time trend indicator, separately for each issue topic.

Table 1: Panel Regression Results

	Total		Gallup	
	Pooling	Fixed Effects	Pooling	Fixed Effects
	(1)	(2)	(3)	(4)
MIP	0.030	0.159***	0.072**	0.156***
	(0.033)	(0.013)	(0.034)	(0.016)
NYT	0.010***	0.001***	0.009***	0.001***
	(0.0004)	(0.0002)	(0.0004)	(0.0002)
BillsAll	−0.001***	−0.0001**	−0.001***	−0.00002
	(0.0001)	(0.00004)	(0.0001)	(0.00005)
tilelection	0.006***	0.002***	0.007***	0.003***
	(0.002)	(0.0005)	(0.002)	(0.001)
Year	−0.0001	0.0001**	−0.00000	0.0003***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)
Constant	0.289		0.059	
	(0.456)		(0.468)	
Observations	3,708	3,708	3,708	3,708
R^2	0.180	0.062	0.151	0.041
Adjusted R^2	0.180	0.061	0.150	0.041
F Statistic	162.595***	48.464***	131.295***	31.411***
Note:	*p<0.1; **p<0.05; ***p<0.01			

with lower salience on the polling agenda.

The *MIP* variable, which measures the proportion of respondents rating a given issue area as the most important problem, appears to have a large and positive effect on polling agenda salience. An effect of 1 would mean that if 100% of the public rated the issue as the most important facing the nation, then 100% of the polling agenda would be about that topic. The estimated effect ranges from 0.03 to 0.159, indicating that a 100% shift in importance rating toward this issue would lead to a 3-to-16-percentage-point increase in salience on the polling agenda. The observed values of the *MIP* variable range from 0.00 to 0.82, with a change from the 5% quantile (0.00) to the 95% (0.28) estimated to increase polling agenda salience by between 0.8 and 4.4 percentage points.

The *NYT* variable, which measures the number of *The New York Times* stories on a given issue, has a positive and significant effect on the proportion of the polling agenda dedicated to that topic. The outcome measures are proportions and the NYT variable is a count, so the effects can be interpreted as a change in the proportion of the agenda on a topic given one additional news story. An effect of 1 would mean that an additional news story was associated with a 100% increase in salience on the polling agenda (i.e., the topic was the only one measured that quarter in any poll). The estimated size of this effect ranges from 0.001, meaning an additional news story was associated with a 0.1 percentage point increase in salience on the polling agenda, to 0.01, meaning an additional news story was associated with a 1 percentage point increase in topic salience on the polling agenda. The observed values of the *NYT* variable range from 0 to 67, with a change from the 5% quantile (0) to the 95% quantile (30) estimated to increase polling agenda salience by between 0.03 and 0.3 percentage points.

The *BillsAll* variable, which measure the total number of Congressional bill introductions, has a negative effect on polling agenda salience. The observed range for the variable is from 1 bill to 412 bills, with a change from the 5% quantile (3) to the 95% quantile (79.5) estimated to decrease polling agenda salience by between 0.2 and 8 percentage points.

In short, the broader political agenda appears to strongly shape the contents of the

polling agenda, with the public importance of an issue area and media coverage thereof increasing salience (i.e., the proportion of poll questions focused on a topic), while policy attention to the problem appears to decrease salience.

4 Discussion

Public opinion data collected by polling firms is widely used in political science research. These data serve an invaluable role in our collective understanding of public attitudes on a wide array of topics. The collection of public opinion data that serves a primary function for polling firms while additionally providing a secondary function for academic research means a significantly reduced cost of monitoring the public's preferences over policies, candidates, parties, and other matters. Yet the data needs of academic public opinion researchers (these data's secondary users) and the data needs of polling firms (the primary data users) are not necessarily aligned.

Academic researchers generally expect population-representative or full-population data in order to avoid selection bias in the analysis of relationships such as the stability of macro public opinion or the correspondence between public opinion and governmental policy activity. Polling data do not provide a full population of opinion-times; not all issues are measured by polling firms at all points in time due to various constraints and incentives. But are the opinion-times that are observed a random sampling of all possible opinion-times? If so, then academic researchers can confidently analyze polling data to draw broad, generalizable conclusions about public opinions and their roles in democracy. If not, then polling data are a product of systematic sampling of opinion-times that may not serve the scholarly interests of these secondary data users.

The present research suggests that the polling agenda — the set of opinion questions measured at any given point in time — is not a representative sampling of all possible opinion-times. Instead, polling firms are incentivized by media and political elites to collect opinion data that is immediately valuable and newsworthy. This means that polling firms have every reason to measure public opinion on issues that are already salient in the

news media and sufficiently politically important to already hold space on elite agendas. Analysis of a comprehensive set of polling data from 1957 to 2008 lends support to these expectations: the salience of issues on the polling agenda reflect their salience on elite political agendas. The polling agenda therefore reflects public attitudes seen through the lens of elite issue priorities, thus biasing the set of public opinion information available to elites and to academic researchers.

The mediation of public sentiment through an agenda set of by strategically behaving polling firms has important consequences for academic researchers and for politicians and governments who expect those data to provide an unbiased insight into public views. The polling agenda is an unavoidable part of contemporary public opinion research, but researchers should not shy away from acknowledging its existence and the importance thereof for conducting such research.

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A Crosswalk between PAP and Roper Center Codes

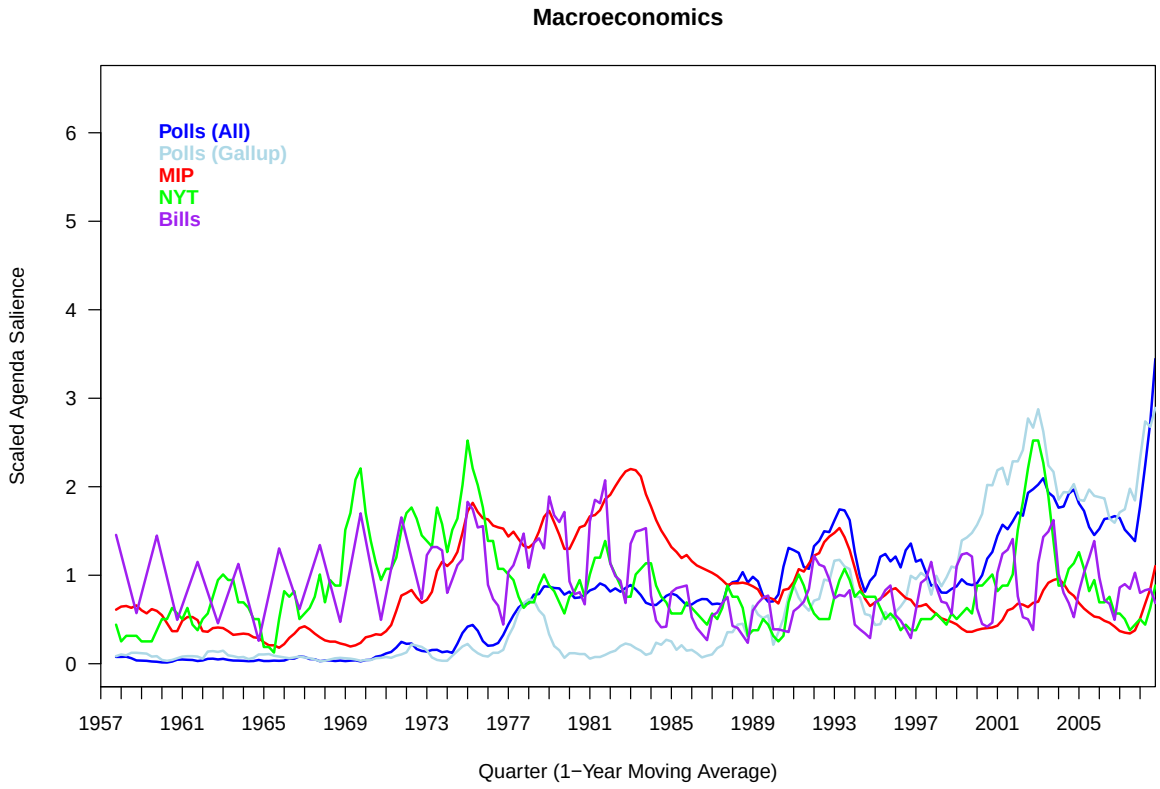
PAP Code	Roper Topic	Roper Description
2	Abortion	Approval of abortion, parental consent for youth, abortion clinics
19	Africa	Issues and events primarily involving sub-Saharan African countries, their leaders and people (other than the Middle East)
4	Agriculture	Farmers as a group; farm policy; agriculture
3	Alcohol	Alcoholic beverages; legal drinking age; drunk driving
–	Animals	Issues of humaneness; use in lab research; liking for
19	Asia	Issues and events involving Asian countries, their leaders and people (other than China, Japan, and Soviet Union)
2	Blacks	Anything having to do with blacks as a group, including attitudes of blacks
15	Business	Business as a group/institution; businessmen; responsibilities to society and employees
19	Canada	Issues and events involving Canada, its leaders/people
19	China	Issues and events involving China, its leaders/people
2	Communism	Assessments of it as a socio-political system
–	Confidence	Confidence in government, business, labor, and other institutions
20	Congress	Congress and its units; House of Representatives/Senate, includes Congressional elections
15	Consumer	Issues involving consumers; purchases made/intended; products; services; consumer protection; reform
12	Courts	The judiciary, courts including the Supreme Court; lawyers, trials, juries, verdicts, criminal justice system
12	Crime	Crime; punishment; law-enforcement; police, guns, death penalty
–	Culture	The arts, pop culture, music, movies
–	Death	Fear of; views of life after; euthanasia
16	Defense	U.S. Defense policy/spending; Civil defense; draft
19	Democracy	Ratings of; belief in protecting; whether other countries are democracies
19	Diplomacy	U.S. foreign policy, including use of U.S. troops
26	Disasters	Natural and human-caused; floods and famine; industrial plant catastrophes, mass destruction
12	Drugs/Narcotics	Use of heroin, marijuana, etc.; attitudes toward illegal drugs, drug testing
1	Economics	National economy; free enterprise, federal budget deficit, unemployment, inflation, stock market
6	Education	Education, education in schools and universities, spending on, teachers students
13	Elderly	Needs and status of the elderly
20	Elections	Elections (other than presidential) and referenda; attitudes toward them, vote intent and actual vote, candidates

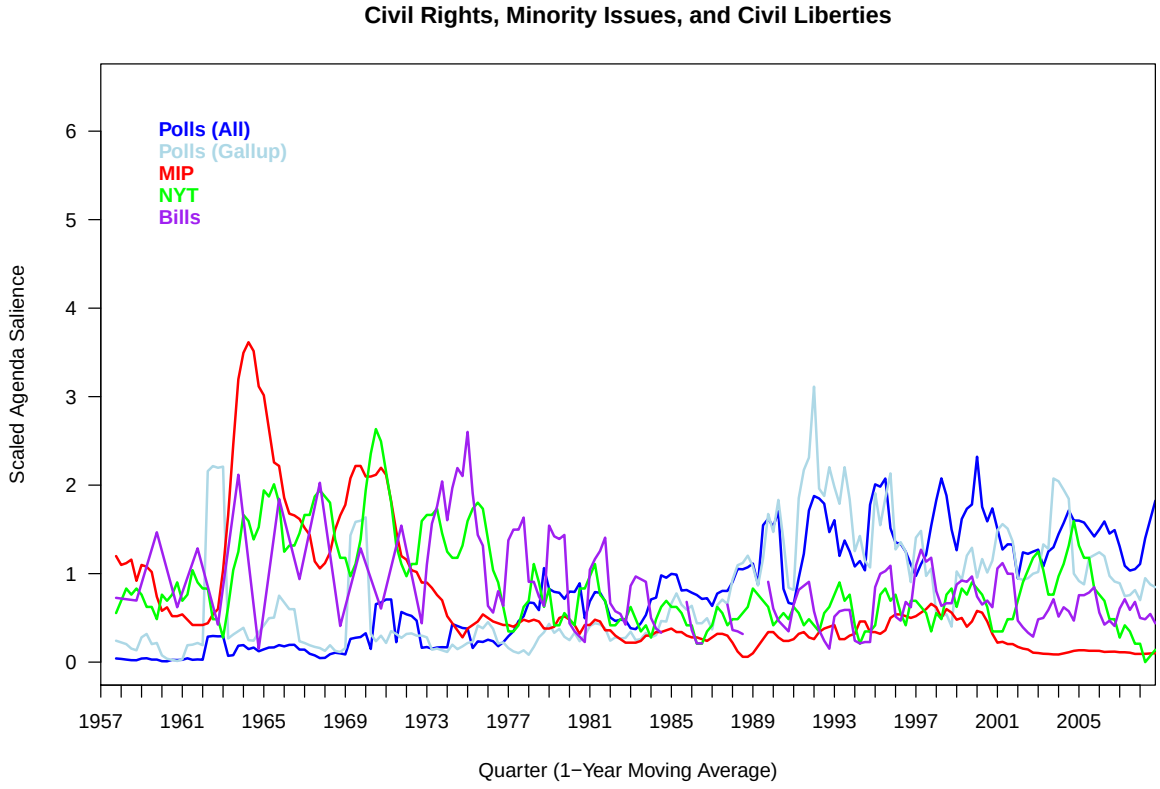
8	Energy	Energy policy; sources of power; uses of energy, including nuclear
7	Environment	Environmental issues, including population control
2	Equality	Equality of different groups; discrimination; affirmative action, ERA, civil rights
31	Ethics	Ethics of individuals/groups; morals; honesty
19	Europe	Issues and events involving West European countries, their leaders and people
12	Family	Issues of the family; family status, including marriage and divorce, ideal number of children, family planning
20	Federalism	Issues of what level of government is best suited to various tasks; revenue sharing
15	Finances	Personal financial well-being; buying/selling decisions, e.g. can afford, enough money to pay bills, investing
19	Foreign Countries	Ratings of foreign countries, leaders and people, respect for countries leaders
–	Future	Expectations; projections
20	Government	Attitudes toward; assessments of government at federal, state or local level
–	Groups	Ratings; perceptions of groups of people, organizations
3	Health	Health status; health policy; spending on public health, smoking; health and illness, use of doctors, dentists, hospitals; exercise and fitness, health care, health reform, diet, nutrition
2	Hispanics	Anything having to do with Hispanics as a group, including attitudes of Hispanics
14	Housing	Public vs. private; inadequate housing as a problem; satisfaction with; rent control; upkeep; repairs, homelessness
–	Ideology	Self-described; perception of others
5	Immigration	US immigration policy; policing borders; emigration
–	Information	Awareness of issues and candidates; historical and general knowledge; seen/read/heard about something
19	Israel	Issues and events involving Israel, its leaders/people
19	Japan	Issues and events involving Japan, its leaders/people
5	Labor	Trade unions, strikes, labor force as a group
19	Latin America	Issues and events involving countries in Central and South America and the Caribbean countries, their leaders and people
–	Leaders	Assessments of famous persons or leaders; most admired persons; heroes
20	Local	Governmental issues and other questions involving sub-state units
3	Medicine	Medical science and doctors, hospitals, nurses, pharmacists, medical technology; over the counter and prescription medications; science and technology in the field of medicine and health; abuse of medication; been to doctor, had medical tests, had treatment
–	Men	Attitudes toward men as a group, attitudes of men

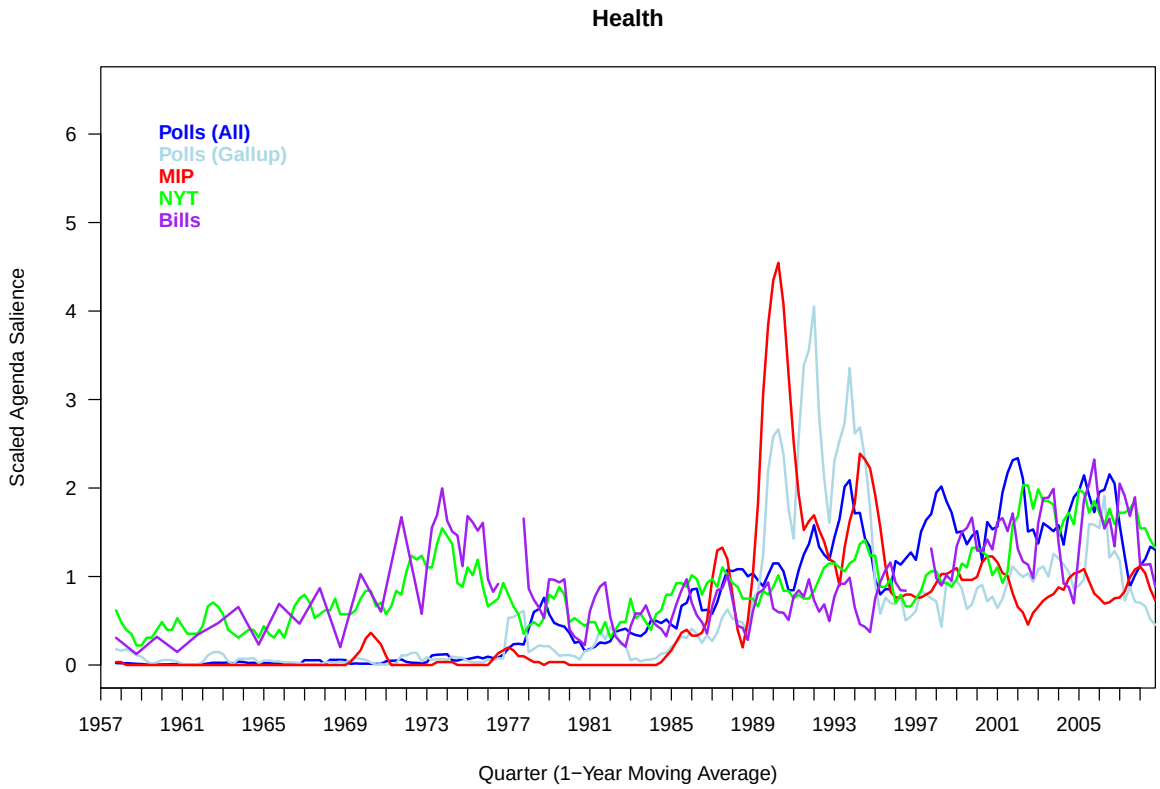
19	Middle East	Issues and events involving the Middle East, including North Africa, its leaders and people
2	Minorities	All issues involving minorities, other than blacks and Hispanics; various ethnic issues; includes all racial, religious, ethnic and sexual preference minorities
–	Mobility	Plan to move; why move; where live now; where born; rural/urban preference; have moved; state/country prefer to live in
–	Mood	Alienation; happiness; satisfactions; hopes/fears/concerns/worries, emotions, concerns, powerlessness, quality of life
2	Nuclear	Issues of nuclear power (energy) and weaponry (defense)
3	Nutrition	Adequacy of diet; dieting; health foods; vitamins
–	Participation	Does one vote; participation in community affairs; volunteerism; demonstrating; organization membership, contribute money
–	Patriotism	Political parties as actors/objects of attitudes (other than self-described party identification)
–	Political Parties	Self-described party identification
–	Political Partisanship	Feelings about, affect of American society, values, institutions; state of American nationalism; which country best; type of government best; duties to country; America's role in world, pride in country
–	Polling	Assessments of polls and their performance
12	Pornography	Sex in the movies and other media; pornography and children; pornography laws
–	Power	Influence and/or power of individuals, groups, countries, threats to the nation
20	Presidency	All issues involving the presidency and the policies of presidents and vice presidents, First Ladies, administration (other than presidential election matters and presidential performance ratings)
20	Presidential Approval	Presidential, vice presidential, First Ladies performance in office; ratings
17	Press	Perceptions and use of the communications media, including TV, radio, newspapers, and magazines
–	Problems	Most important problems facing the United States; problems most important to oneself; personal worries and concerns; parties and leaders best in meeting said problems; problems facing state/community/ family/schools etc.
–	Ratings	All ratings, job scores, and other performance measures, except of the president and the vice president
29	Recreation	Leisure; vacations
–	Reform	Assessments of proposed changes in political parties, campaign finance, governmental institutions, constitutional amendments
–	Regions	Attitudes toward US geographic regions
–	Regulation	All issues of government regulation and deregulation

31	Religion	Religion, including beliefs; churches' role; power, etc.
13	Retirement	All issues relating to one's own retirement; retirement policy
2	Rights	Civil liberties; human rights; privacy
19	Russia	Issues and events involving the Soviet Union, its leaders/people
17	Science	Science and research; technology, computers
31	Sex	Sexual conduct/morality; birth control, extramarital sex
–	Social	Social interactions; networks
13	Social Security	All issues relating to the Social Security system
19	Soviet Bloc	Issues and events involving Soviet Bloc countries, their leaders and people; Warsaw Pact
17	Space	Space exploration; spending; UFOs
20	Spending	Federal, state, and local government spending
29	Sports	Interest/participation in sports; athletes; Olympics
20	States	Governmental issues and other questions involving states
–	Taste	Likes/dislikes in a cultural sense
20	Taxing	Federal, state, and local government revenues; forms of taxation
–	Television	Attitudes toward and experience with television, viewing, networks, celebrities, ratings
18	Trade	Imports and exports; protectionism
10	Transportation	Mass transit; deregulation of airlines; airplanes and flying; automobiles
19	United Nations	United Nations; US support of U.N.
14	Urban	Needs; problems; status of cities; urban policies
31	Values	Issues of right vs. wrong; morality; includes non-religious beliefs, astrology, ESP, ghosts, etc.
16	Veterans	Veterans issues, including benefit programs
–	Vote For President	Presidential elections; vote intent; candidates; nominations; party platform, primaries, did vote, why voted for particular candidate, candidate's stand on issues
16	War	War and peace; likelihood of war; questions of survival
13	Welfare	Attitudes toward and care for the poor, needy, handicapped
2	Women	Anything having to do with women as a group; sex roles; equality, includes attitudes of women
–	Work	Work; job; occupation; career choices
5	Youth	

B Issue-Specific Time Series






Health
Polls (All)
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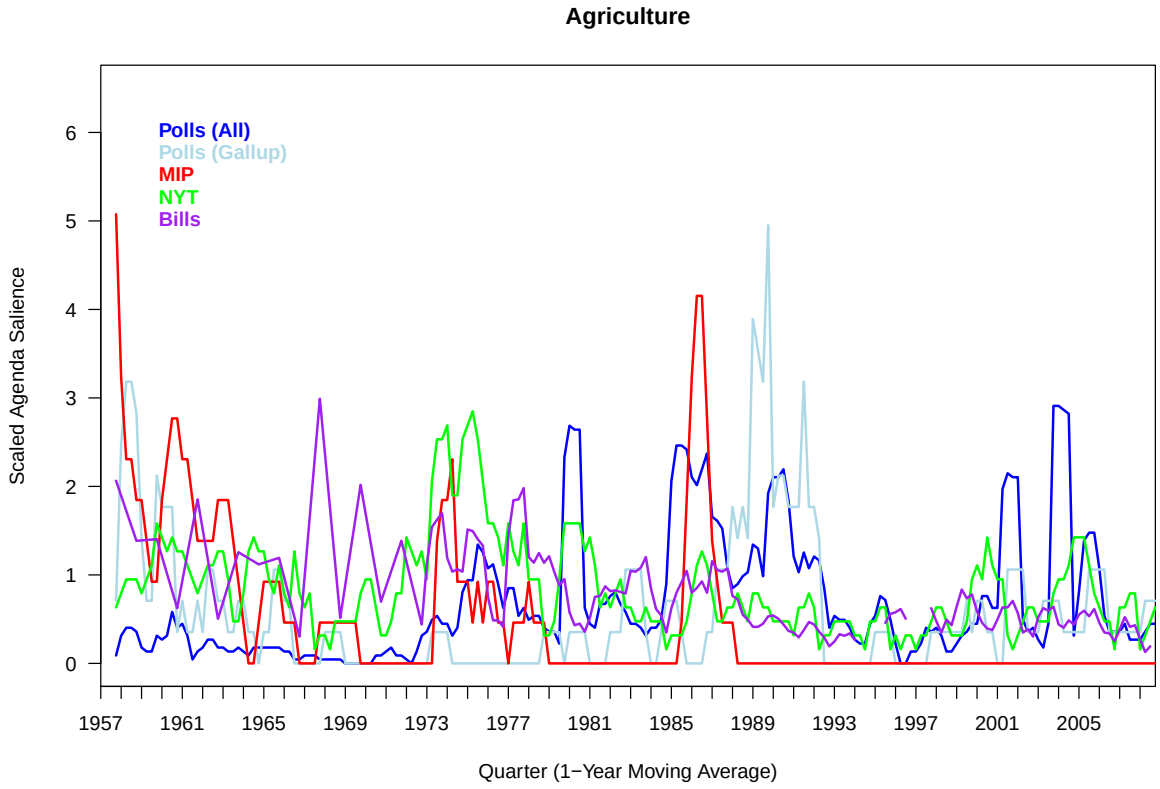
Agriculture
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Polls (Gallup)
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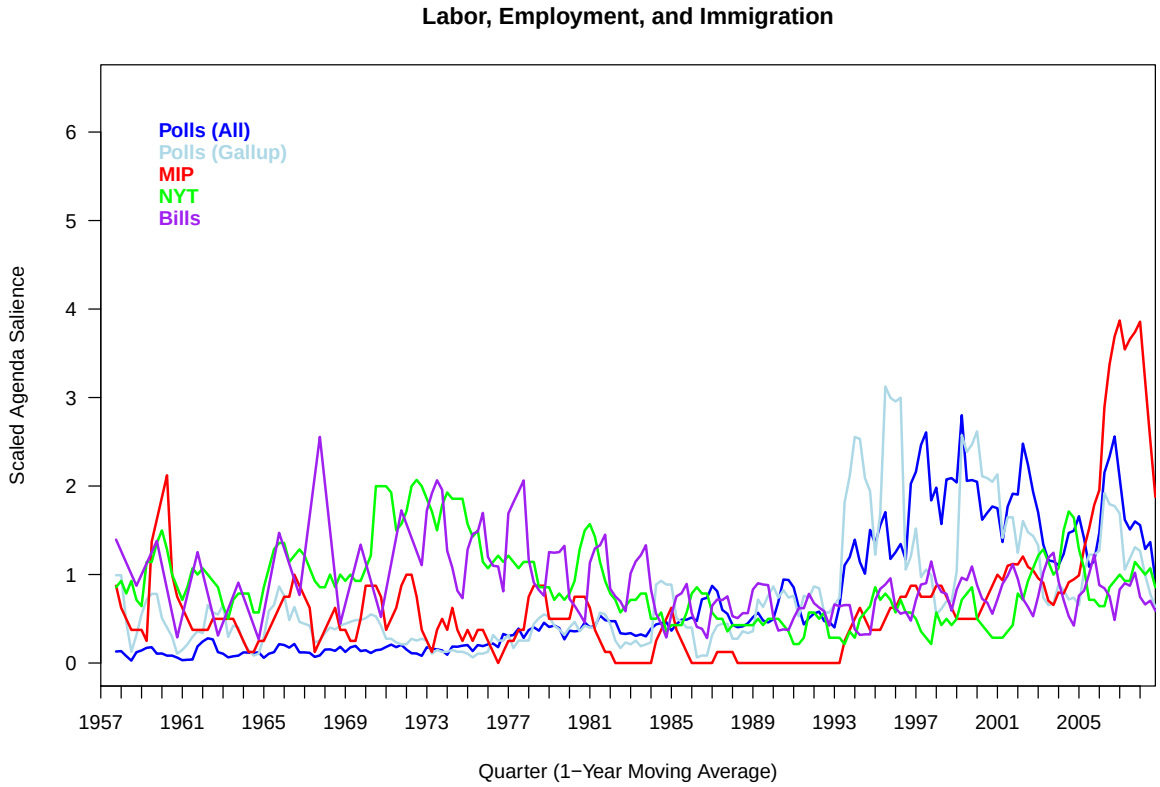
Labor, Employment, and Immigration
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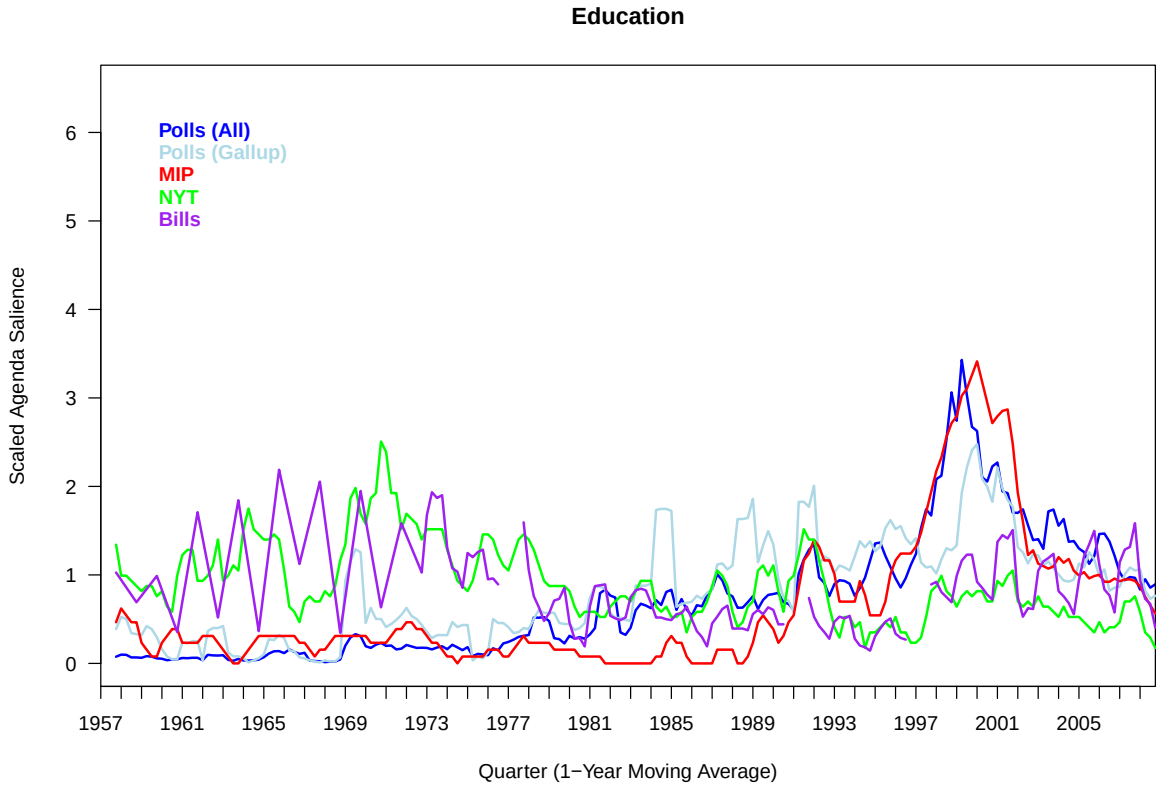
Education
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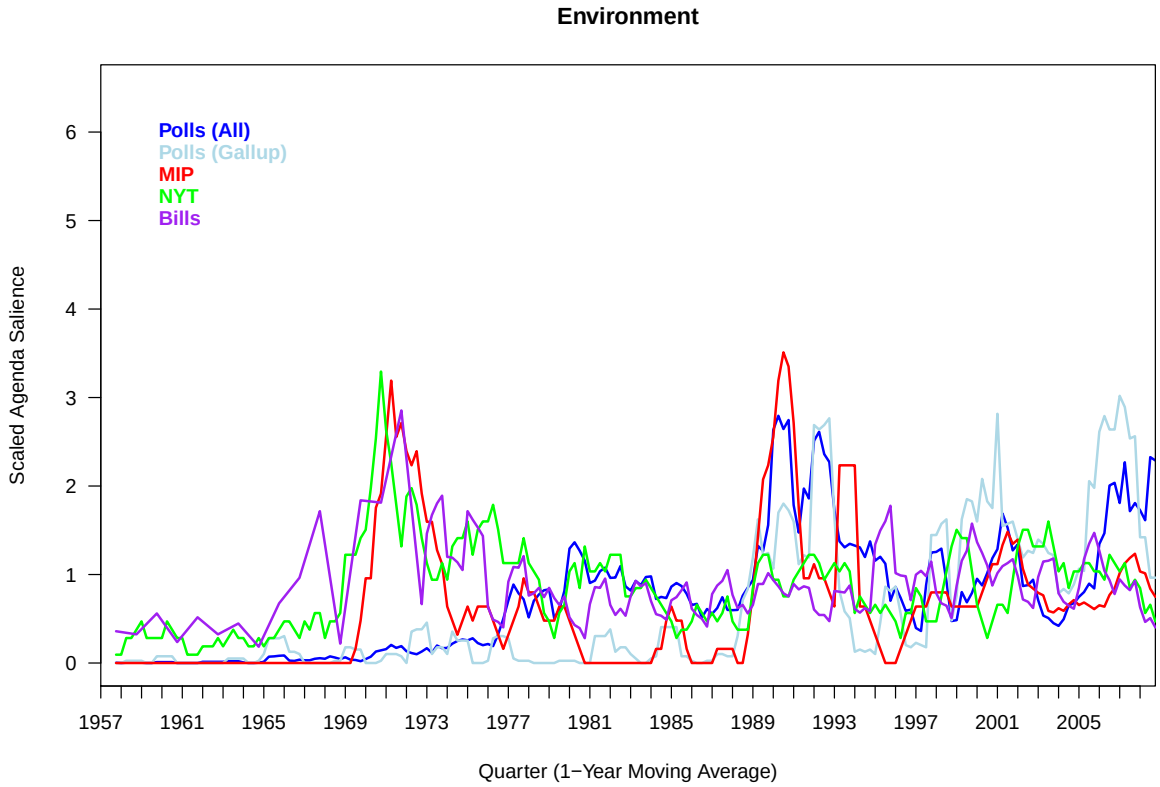
Environment
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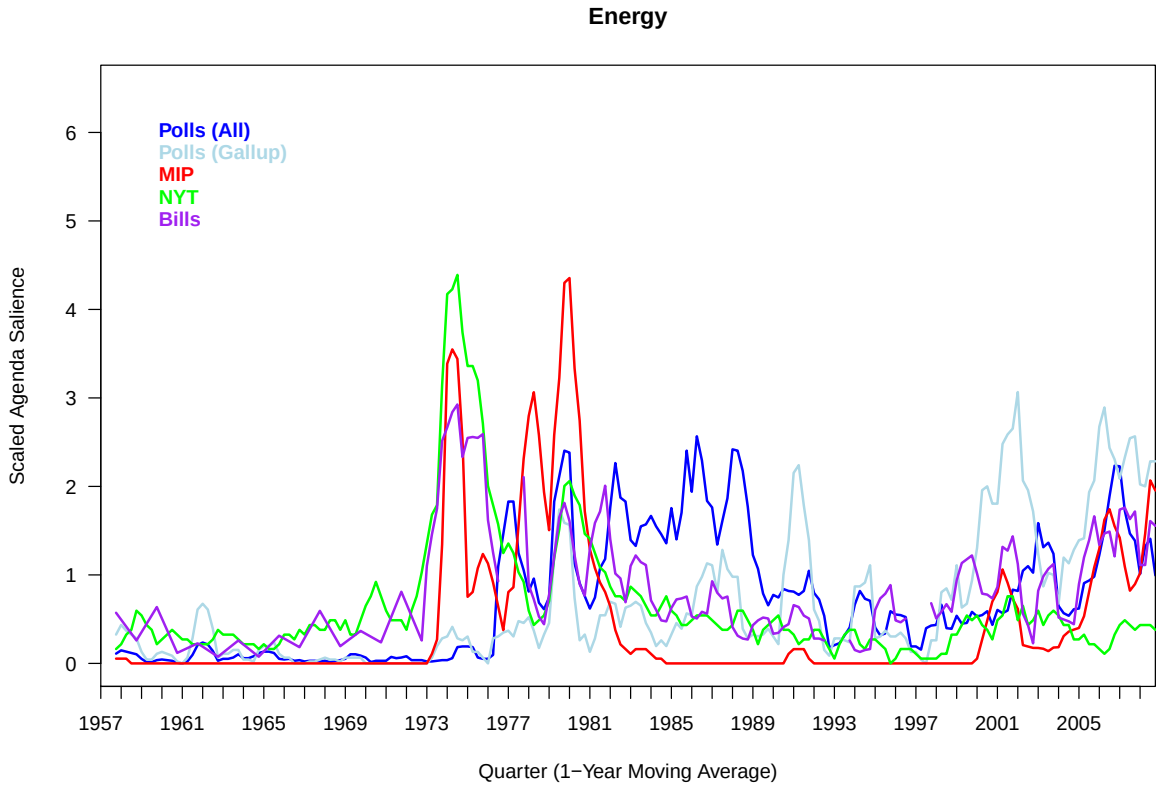
Energy
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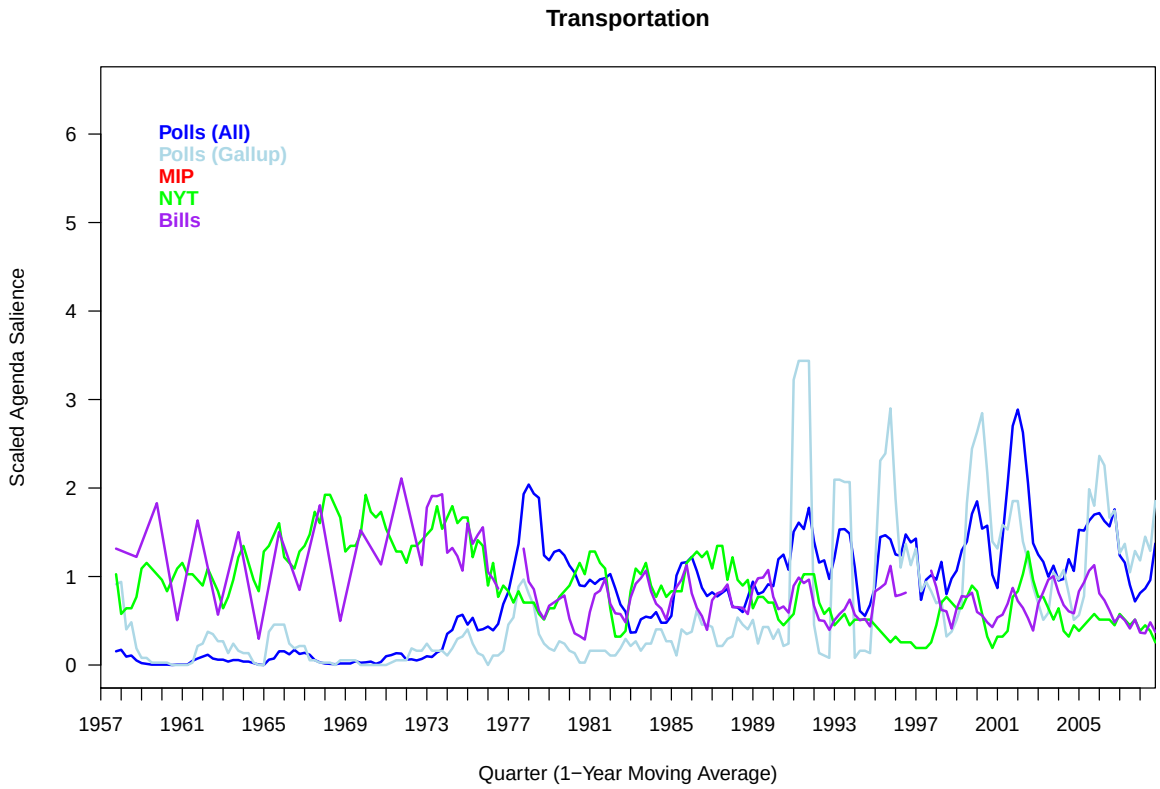
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Polls (Gallup)
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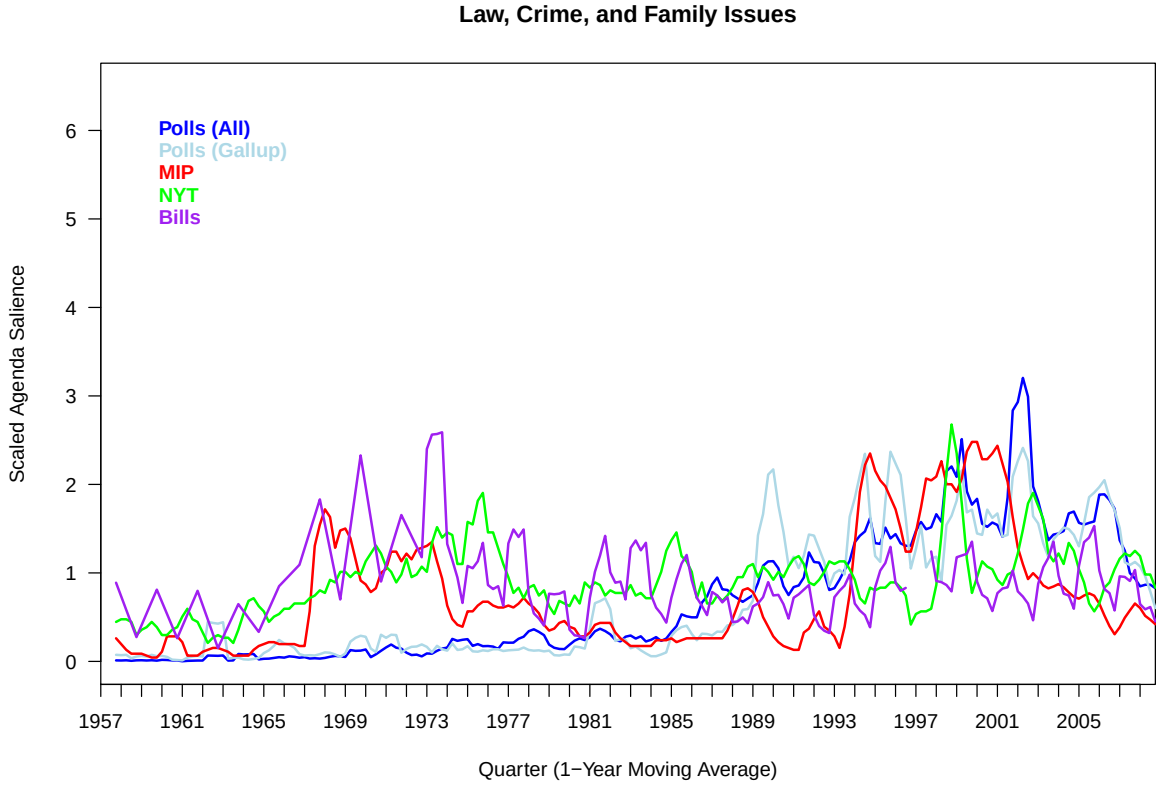
Law, Crime, and Family Issues
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Polls (Gallup)
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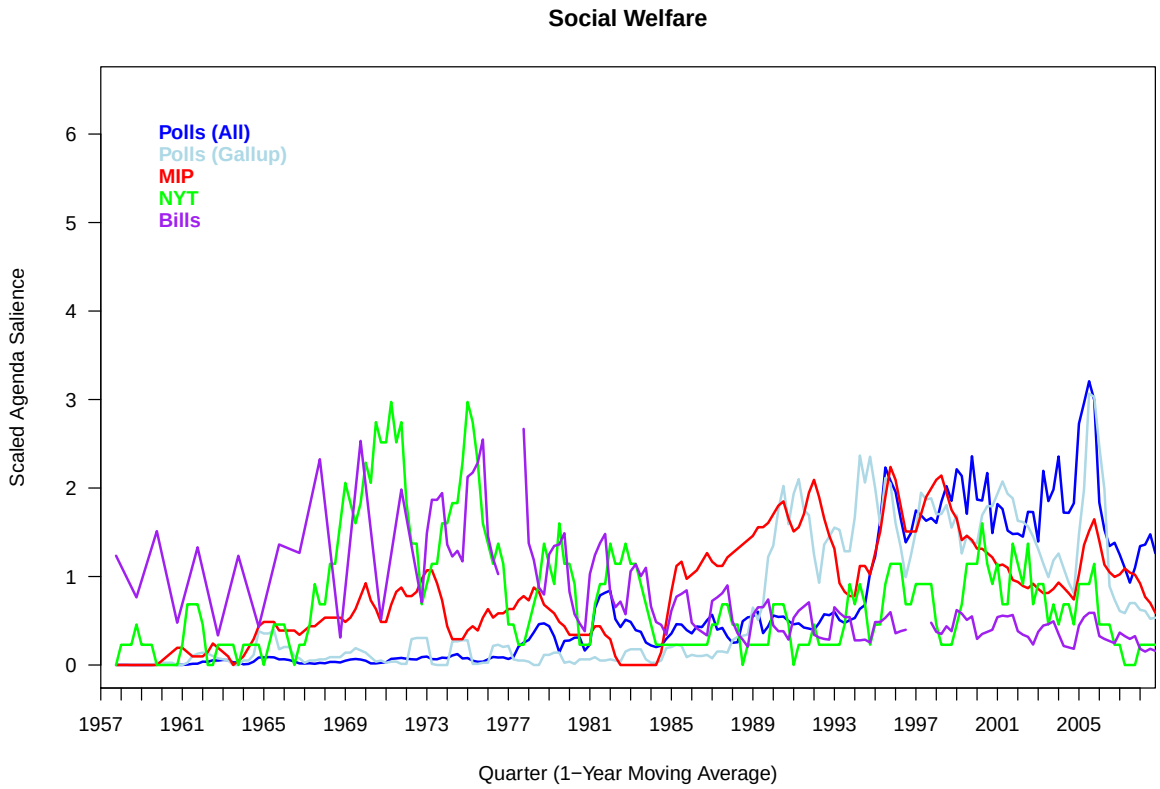
Social Welfare
Polls (All)
Polls (Gallup)
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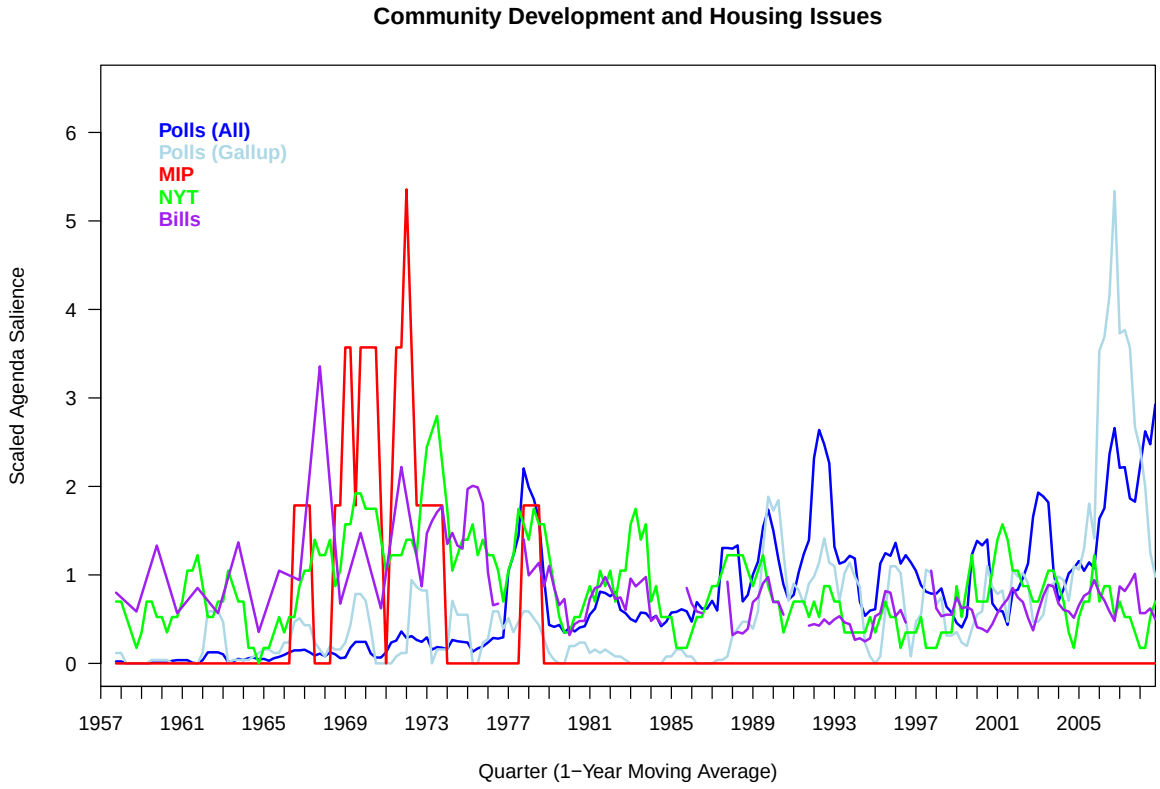
Community Development and Housing Issues
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Polls (Gallup)
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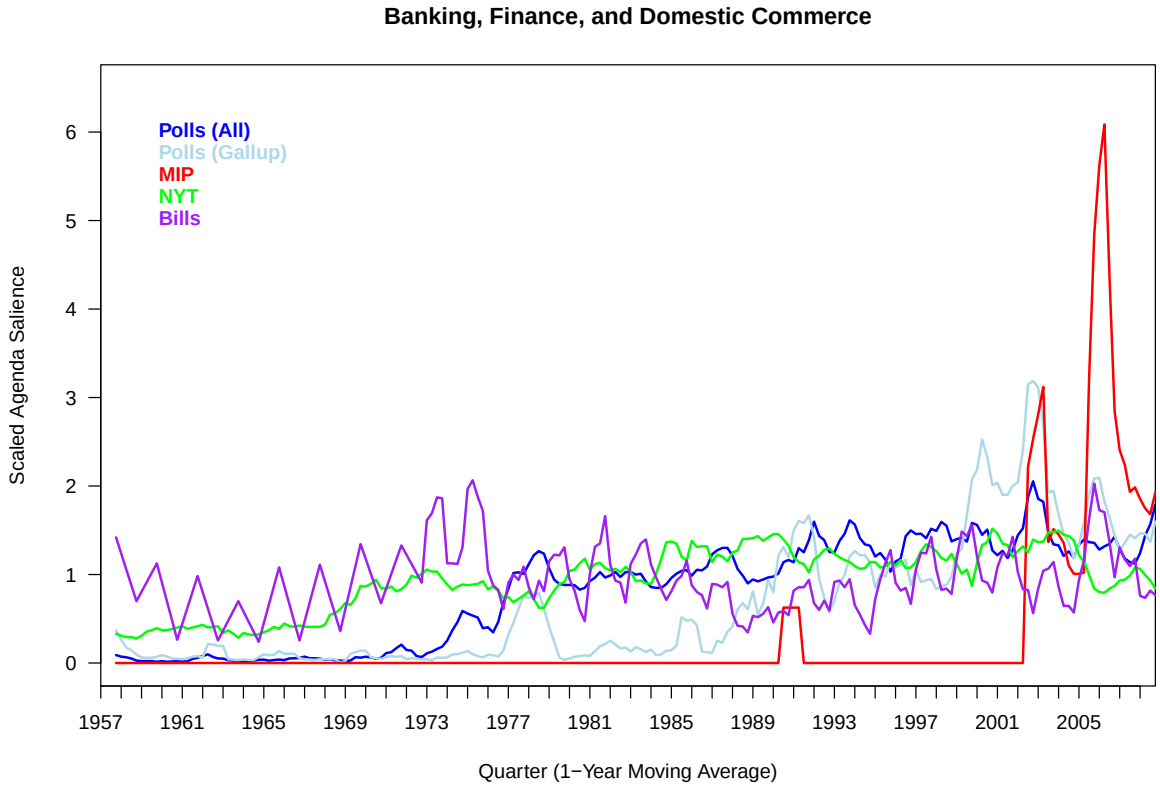
Banking, Finance, and Domestic Commerce
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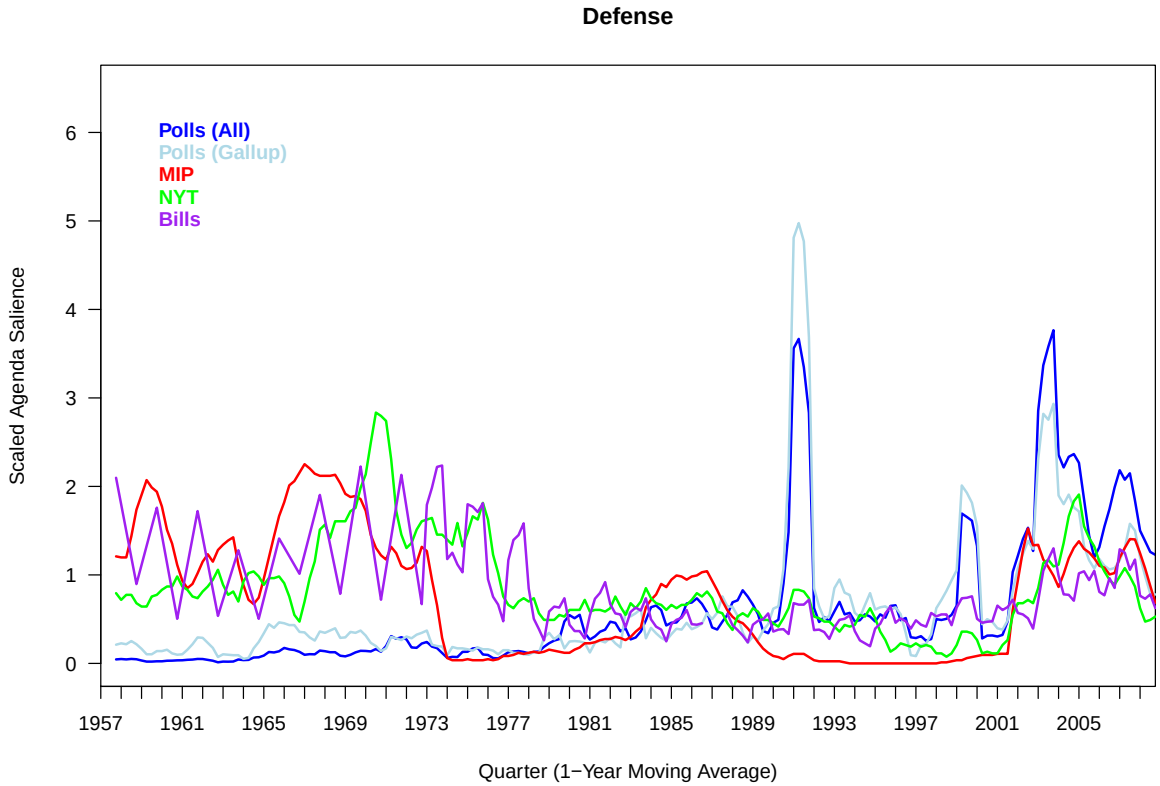
Defense
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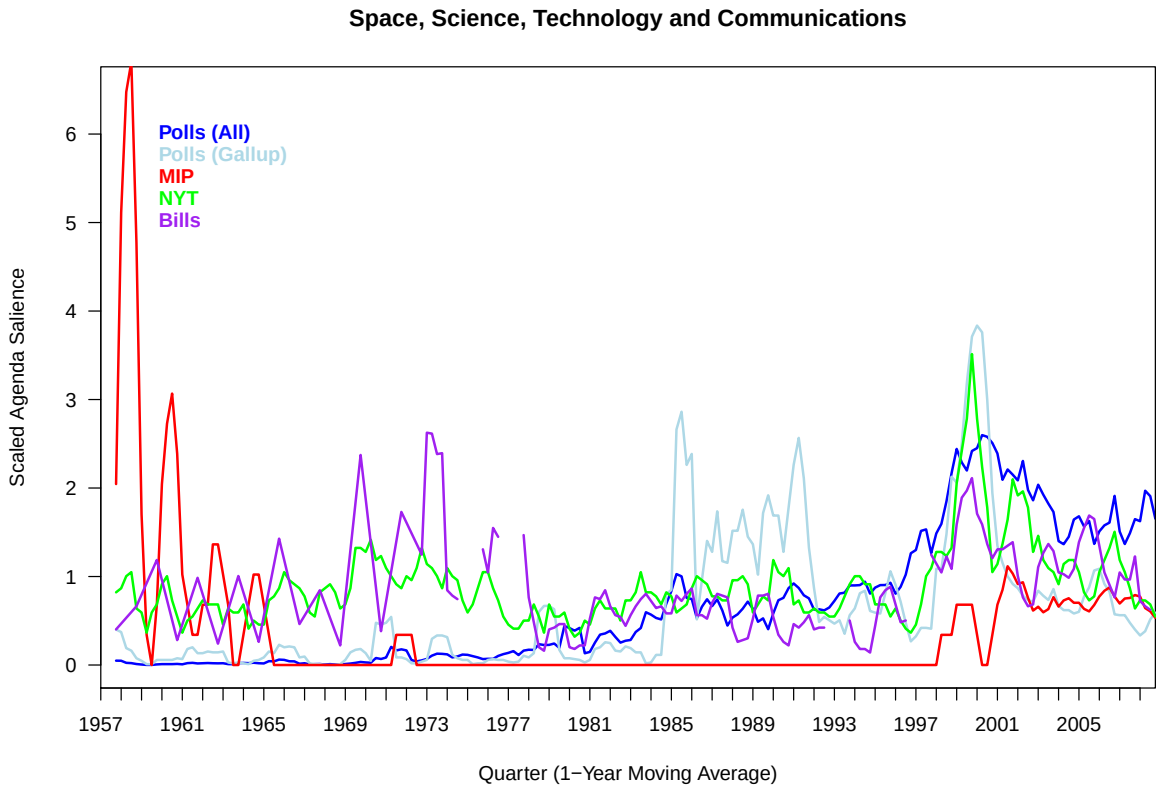
Space, Science, Technology and Communications
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Polls (Gallup)
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Bills
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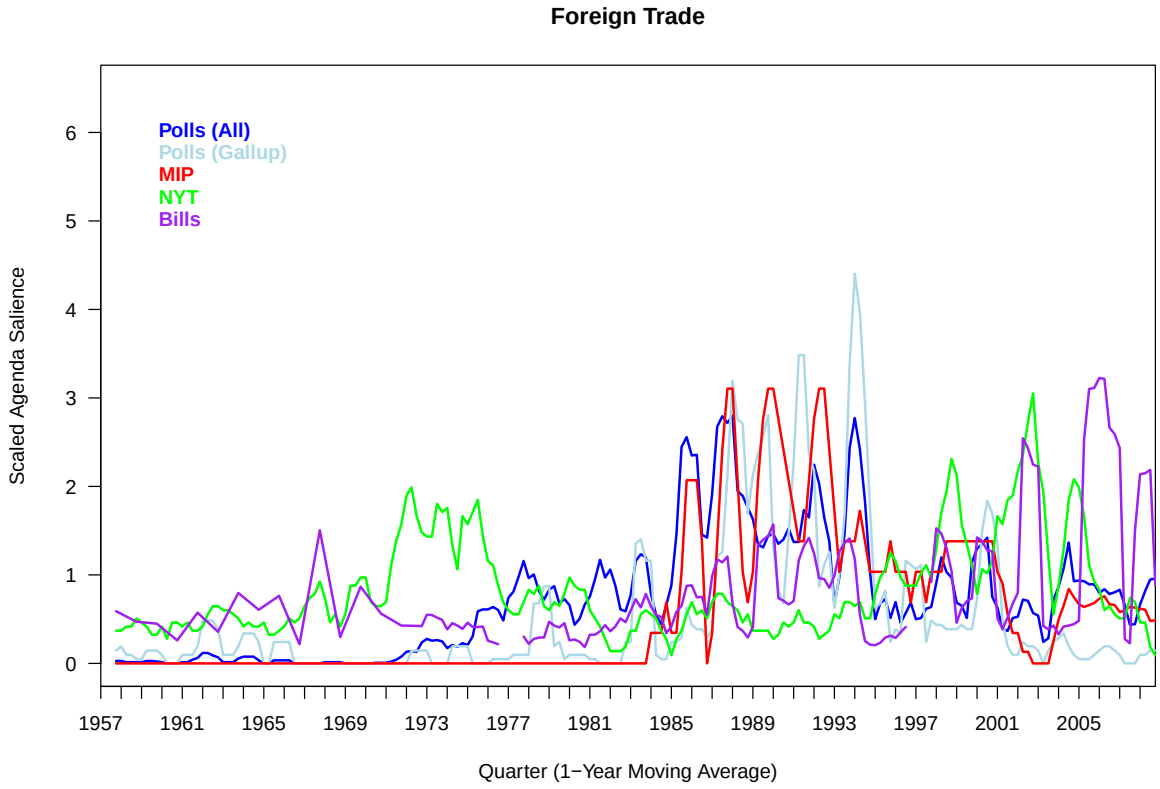
Quarter (1−Year Moving Average)


Foreign Trade
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Polls (Gallup)
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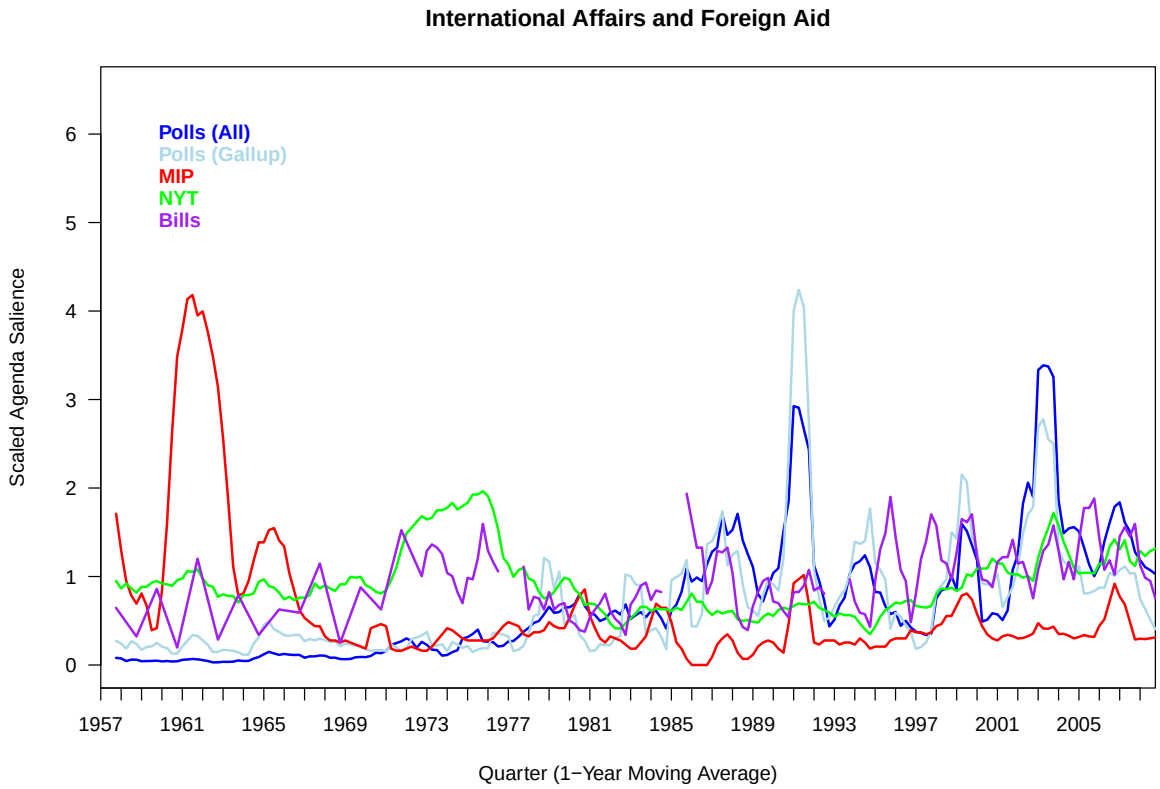
International Affairs and Foreign Aid
Polls (All)
Polls (Gallup)
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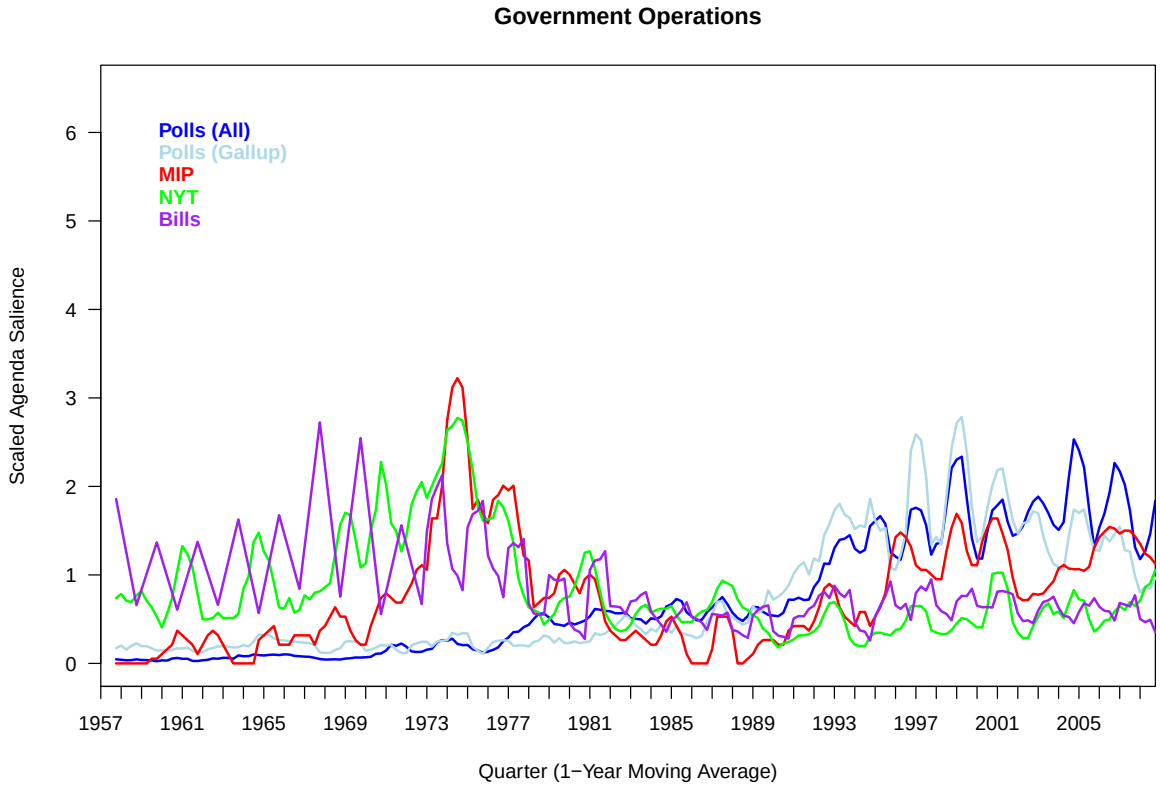
Quarter (1−Year Moving Average)


Government Operations
Polls (All)
Polls (Gallup)
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C Issue-Specific Time-Series Regression Results

C.1 Time-Series Regressions Predicting Proportion of Polling Agenda Focused on Each Issue Topic (1 of 2)

	PAP 1	PAP 2	PAP 3	PAP 4	PAP 5	PAP 6	PAP 7	PAP 8	PAP 9
Intercept	4.12*	5.51*	3.06*	-0.02	2.14*	0.91	1.13*	0.75*	1.37*
	(0.44)	(1.19)	(1.00)	(0.09)	(0.70)	(0.54)	(0.23)	(0.19)	(0.27)
NYT_t	-0.05	0.02	0.15	0.07*	0.07	0.39*	0.10	-0.03	-0.07
	(0.08)	(0.23)	(0.16)	(0.03)	(0.12)	(0.08)	(0.05)	(0.04)	(0.05)
NYT_{t-1}	-0.13	0.16	0.26	-0.01	-0.16	0.11	0.02	0.03	0.01
	(0.08)	(0.23)	(0.16)	(0.03)	(0.13)	(0.08)	(0.06)	(0.05)	(0.05)
NYT_{t-2}	0.00	0.01	0.10	0.04	0.05	-0.09	0.04	0.01	-0.01
	(0.07)	(0.23)	(0.15)	(0.03)	(0.13)	(0.08)	(0.06)	(0.05)	(0.05)
MIP_t	8.43*	18.81	37.55*	6.93	12.20	-1.82	4.74	7.52*	–
	(2.34)	(10.85)	(13.44)	(7.71)	(19.18)	(19.47)	(8.21)	(3.22)	
MIP_{t-1}	-0.40	26.36*	-14.45	7.76	-8.52	9.38	11.75	-3.48	–
	(2.88)	(13.19)	(18.71)	(8.26)	(21.05)	(22.52)	(8.36)	(3.49)	
MIP_{t-2}	-2.42	-23.26*	7.80	10.09	7.77	5.77	5.76	1.23	–
	(2.32)	(10.97)	(13.39)	(6.78)	(19.19)	(19.03)	(7.83)	(3.06)	
Bills_t	0.03*	0.04	-0.02	-0.00	0.01	0.00	-0.01	-0.01	0.03
	(0.01)	(0.05)	(0.02)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.06)
Bills_{t-1}	0.02*	-0.06	0.02	-0.00	0.02	-0.01	-0.00	-0.00	1.37*
	(0.01)	(0.04)	(0.02)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.27)
Bills_{t-2}	0.01	0.03	-0.01	0.00	0.01	-0.01	-0.00	0.00	-0.07
	(0.01)	(0.04)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)
'til Election_t	-0.41*	0.01	0.21	0.01	-0.11	0.17	0.02	0.06	0.01
	(0.10)	(0.27)	(0.21)	(0.02)	(0.16)	(0.11)	(0.05)	(0.05)	(0.05)
Adj. R^2	0.28	0.11	0.22	0.11	-0.02	0.15	0.04	-0.01	-0.00

Note: Cell entries are linear regression coefficient estimates, with standard errors in parentheses, estimated via the formula in Equation 1.

C.2 Time-Series Regressions Predicting Proportion of Polling Agenda Focused on Each Issue Topic (2 of 2)

	PAP 10	PAP 11	PAP 12	PAP 13	PAP 14	PAP 15	PAP 16	PAP 17	PAP 18
Intercept	3.14*	1.87*	0.51*	7.13*	1.90*	1.16*	0.72*	12.79*	27.51*
	(0.88)	(0.39)	(0.12)	(1.48)	(0.64)	(0.46)	(0.17)	(1.86)	(1.47)
NYT_t	0.17*	0.23	0.00	0.03	0.16*	0.16*	-0.01	0.08	0.12
	(0.08)	(0.15)	(0.05)	(0.04)	(0.05)	(0.06)	(0.02)	(0.07)	(0.09)
NYT_{t-1}	-0.03	0.33*	0.03	0.03	0.00	0.09	-0.01	0.05	-0.05
	(0.08)	(0.15)	(0.05)	(0.04)	(0.06)	(0.06)	(0.02)	(0.07)	(0.10)
NYT_{t-2}	0.12	-0.27	-0.00	0.00	-0.07	0.17*	-0.01	-0.03	-0.19*
	(0.08)	(0.15)	(0.05)	(0.04)	(0.05)	(0.06)	(0.02)	(0.07)	(0.09)
MIP_t	12.74	32.72*	34.52	-111.78	13.92*	40.65	40.85*	11.48	24.21
	(6.76)	(8.40)	(23.22)	(112.70)	(4.81)	(26.67)	(13.07)	(13.31)	(24.64)
MIP_{t-1}	0.29	-14.22	46.22*	-49.01	-2.92	-46.97	-24.69	6.53	21.22
	(8.62)	(10.37)	(23.52)	(122.19)	(6.42)	(34.37)	(15.78)	(18.43)	(27.37)
MIP_{t-2}	9.81	-2.31	-26.49	-204.92	1.05	-9.39	11.82	-10.87	-10.71
	(6.72)	(8.20)	(23.38)	(112.08)	(4.98)	(25.81)	(12.97)	(13.31)	(24.32)
Bills_t	-0.01	-0.02*	0.01	0.09*	0.01	-0.00	-0.00	-0.12	0.03*
	(0.01)	(0.01)	(0.01)	(0.03)	(0.01)	(0.02)	(0.00)	(0.09)	(0.01)
Bills_{t-1}	-0.01	-0.01	-0.01	0.03	-0.00	0.01	0.00	-0.14	0.01
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.00)	(0.07)	(0.01)
Bills_{t-2}	0.00	-0.01	0.02*	0.04	0.00	-0.00	-0.00	-0.08	0.00
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.00)	(0.07)	(0.01)
'til Election_t	0.23	0.15	-0.00	-0.46	0.04	-0.01	0.05	0.47	-1.44*
	(0.16)	(0.08)	(0.03)	(0.25)	(0.14)	(0.09)	(0.03)	(0.33)	(0.32)
Adj. R^2	0.19	0.19	0.06	0.07	0.31	0.18	0.05	0.04	0.12

Note: Cell entries are linear regression coefficient estimates, with standard errors in parentheses, estimated via the formula in Equation 1.

C.3 Time-Series Regressions Predicting Proportion of Gallup Agenda Focused on Each Issue Topic (1 of 2)

	PAP 1	PAP 2	PAP 3	PAP 4	PAP 5	PAP 6	PAP 7	PAP 8	PAP 9
Intercept	5.48*	3.33*	3.06*	-0.01	1.15*	2.77*	0.54*	0.87*	1.09*
	(0.93)	(1.20)	(1.07)	(0.09)	(0.50)	(1.15)	(0.26)	(0.39)	(0.33)
NYT_t	0.09	-0.00	-0.13	0.01	0.18*	0.46*	0.03	0.03	-0.17*
	(0.16)	(0.23)	(0.17)	(0.03)	(0.09)	(0.17)	(0.06)	(0.08)	(0.06)
NYT_{t-1}	0.13	0.38	0.10	-0.02	-0.04	0.42*	0.04	-0.15	0.02
	(0.17)	(0.23)	(0.17)	(0.03)	(0.09)	(0.18)	(0.06)	(0.09)	(0.06)
NYT_{t-2}	0.01	-0.31	-0.12	-0.01	-0.10	-0.30	0.00	0.00	-0.09
	(0.16)	(0.23)	(0.16)	(0.03)	(0.09)	(0.17)	(0.06)	(0.09)	(0.06)
MIP_t	12.28*	24.28*	27.84	-6.84	26.10	-10.26	24.35*	26.95*	–
	(4.90)	(10.92)	(14.40)	(7.65)	(13.65)	(41.01)	(9.16)	(6.45)	
MIP_{t-1}	-3.11	3.26	23.95	8.15	6.69	-13.75	0.30	3.05	–
	(6.03)	(13.26)	(20.04)	(8.20)	(14.98)	(47.44)	(9.33)	(6.99)	
MIP_{t-2}	-9.20	-9.78	-8.43	14.34*	-23.91	11.42	3.51	-9.57	–
	(4.85)	(11.03)	(14.35)	(6.73)	(13.66)	(40.07)	(8.74)	(6.13)	
Bills_t	0.01	0.00	-0.02	0.00	-0.00	-0.04	0.00	0.02	0.01
	(0.02)	(0.05)	(0.02)	(0.00)	(0.01)	(0.03)	(0.01)	(0.01)	(0.07)
Bills_{t-1}	-0.01	-0.05	0.01	0.00	0.01	0.06*	-0.01	-0.00	1.09*
	(0.02)	(0.04)	(0.02)	(0.00)	(0.01)	(0.03)	(0.01)	(0.01)	(0.33)
Bills_{t-2}	0.01	0.02	0.03*	0.00	0.01	-0.09*	-0.00	0.01	-0.17*
	(0.01)	(0.04)	(0.02)	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.06)
'til Election_t	-0.30	0.59*	0.19	0.01	0.09	0.33	0.05	0.08	0.02
	(0.20)	(0.27)	(0.22)	(0.02)	(0.11)	(0.23)	(0.06)	(0.10)	(0.06)
Adj. R^2	0.05	0.09	0.20	0.05	0.05	0.15	0.04	0.22	0.06

Note: Cell entries are linear regression coefficient estimates, with standard errors in parentheses, estimated via the formula in Equation 1.

C.4 Time-Series Regressions Predicting Proportion of Gallup Agenda Focused on Each Issue Topic (2 of 2)

	PAP 10	PAP 11	PAP 12	PAP 13	PAP 14	PAP 15	PAP 16	PAP 17	PAP 18
Intercept	3.55*	1.06*	0.47	2.36	2.79*	2.31*	0.57*	19.03*	29.78*
	(1.22)	(0.33)	(0.24)	(1.27)	(0.79)	(1.02)	(0.24)	(2.72)	(2.01)
NYT_t	0.07	0.06	-0.02	-0.00	0.18*	0.08	-0.03	0.17	0.43*
	(0.11)	(0.13)	(0.09)	(0.03)	(0.07)	(0.12)	(0.03)	(0.10)	(0.12)
NYT_{t-1}	0.07	-0.03	0.05	0.07	-0.02	0.12	-0.01	-0.12	-0.11
	(0.12)	(0.13)	(0.09)	(0.04)	(0.08)	(0.13)	(0.03)	(0.10)	(0.14)
NYT_{t-2}	0.05	0.17	-0.10	0.03	-0.06	0.21	-0.02	-0.03	-0.17
	(0.11)	(0.13)	(0.09)	(0.04)	(0.07)	(0.13)	(0.03)	(0.10)	(0.12)
MIP_t	10.19	35.19*	30.23	277.35*	12.77*	23.25	26.91	18.16	-6.71
	(9.38)	(7.15)	(46.79)	(97.38)	(5.89)	(59.13)	(18.24)	(19.52)	(33.66)
MIP_{t-1}	13.82	-4.05	63.81	90.40	10.58	-60.69	19.96	2.35	44.15
	(11.96)	(8.83)	(47.40)	(105.57)	(7.87)	(76.22)	(22.02)	(27.02)	(37.39)
MIP_{t-2}	-5.22	-7.52	39.75	-24.01	-13.20*	-17.65	-5.33	-7.44	10.99
	(9.32)	(6.99)	(47.11)	(96.84)	(6.11)	(57.22)	(18.10)	(19.52)	(33.23)
Bills_t	0.00	-0.01	-0.00	-0.01	0.03	-0.05	-0.00	-0.20	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.05)	(0.00)	(0.13)	(0.02)
Bills_{t-1}	0.00	-0.01	-0.01	0.00	-0.00	0.04	-0.00	-0.23*	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.04)	(0.00)	(0.11)	(0.02)
Bills_{t-2}	-0.01	-0.01	0.03*	0.02	0.02	-0.06	-0.00	0.00	-0.00
	(0.02)	(0.00)	(0.01)	(0.02)	(0.01)	(0.04)	(0.00)	(0.10)	(0.01)
'til Election_t	0.20	0.01	0.01	0.27	-0.10	-0.08	0.04	0.55	-1.81*
	(0.23)	(0.07)	(0.05)	(0.22)	(0.18)	(0.20)	(0.04)	(0.48)	(0.44)
Adj. R^2	0.06	0.24	0.03	0.11	0.26	0.00	0.03	0.04	0.20

Note: Cell entries are linear regression coefficient estimates, with standard errors in parentheses, estimated via the formula in Equation 1.

D Granger Causality Tests

D.1 Granger Causality Tests between the Polling Agenda and the Media Agenda

	1	2	3	4
Macroeconomics	1.71(-1) = 0.19	1.18(-2) = 0.31	1.09(-3) = 0.35	1.09(-4) = 0.37
Civil Rights, Minority Issues, and Civil Liberties	3.33(-1) = 0.07	1.09(-2) = 0.34	1.19(-3) = 0.31	1.19(-4) = 0.32
Health	13.89(-1) = 0.00	2.96(-2) = 0.05	1.47(-3) = 0.23	1.11(-4) = 0.36
Agriculture	0.01(-1) = 0.92	0.19(-2) = 0.83	0.38(-3) = 0.77	2.02(-4) = 0.09
Labor, Employment, and Immigration	2.81(-1) = 0.10	2.30(-2) = 0.10	3.60(-3) = 0.01	2.21(-4) = 0.07
Education	3.48(-1) = 0.06	2.37(-2) = 0.10	2.67(-3) = 0.05	1.36(-4) = 0.25
Environment	0.09(-1) = 0.77	0.26(-2) = 0.77	0.25(-3) = 0.86	0.28(-4) = 0.89
Energy	0.01(-1) = 0.91	0.08(-2) = 0.92	0.08(-3) = 0.97	0.09(-4) = 0.99
Transportation	10.99(-1) = 0.00	4.24(-2) = 0.02	6.12(-3) = 0.00	3.31(-4) = 0.01
Law, Crime, and Family Issues	0.00(-1) = 0.95	1.03(-2) = 0.36	0.71(-3) = 0.55	0.54(-4) = 0.71
Social Welfare	0.28(-1) = 0.60	4.64(-2) = 0.01	2.85(-3) = 0.04	2.12(-4) = 0.08
Community Development and Housing Issues	0.01(-1) = 0.93	1.80(-2) = 0.17	1.51(-3) = 0.21	1.12(-4) = 0.35
Banking, Finance, and Domestic Commerce	1.84(-1) = 0.18	0.59(-2) = 0.55	0.33(-3) = 0.81	8.19(-4) = 0.00
Defense	0.87(-1) = 0.35	1.15(-2) = 0.32	0.96(-3) = 0.41	0.66(-4) = 0.62
Space, Science, Technology and Communications	0.55(-1) = 0.46	0.47(-2) = 0.62	0.45(-3) = 0.72	0.43(-4) = 0.79
Foreign Trade	0.00(-1) = 1.00	1.68(-2) = 0.19	1.32(-3) = 0.27	1.10(-4) = 0.36
International Affairs and Foreign Aid	1.80(-1) = 0.18	1.18(-2) = 0.31	0.93(-3) = 0.43	1.63(-4) = 0.17
Government Operations	5.77(-1) = 0.02	2.43(-2) = 0.09	1.65(-3) = 0.18	0.94(-4) = 0.44

Note: Cell entries are F statistics and associated p-values, with degrees of freedom in parentheses, for 1–4 lags.

D.2 Granger Causality Tests between the Gallup Polling Agenda and the Media Agenda

	1	2	3	4
Macroeconomics	0.04(-1) = 0.85	0.62(-2) = 0.54	2.10(-3) = 0.10	2.22(-4) = 0.07
Civil Rights, Minority Issues, and Civil Liberties	0.14(-1) = 0.70	4.16(-2) = 0.02	2.69(-3) = 0.05	1.51(-4) = 0.20
Health	2.98(-1) = 0.09	1.20(-2) = 0.30	0.60(-3) = 0.62	0.23(-4) = 0.92
Agriculture	1.85(-1) = 0.18	0.91(-2) = 0.41	0.68(-3) = 0.57	0.48(-4) = 0.75
Labor, Employment, and Immigration	1.64(-1) = 0.20	7.72(-2) = 0.00	5.41(-3) = 0.00	2.68(-4) = 0.03
Education	0.29(-1) = 0.59	5.23(-2) = 0.01	7.17(-3) = 0.00	2.94(-4) = 0.02
Environment	1.35(-1) = 0.25	1.33(-2) = 0.27	0.93(-3) = 0.43	0.16(-4) = 0.96
Energy	0.24(-1) = 0.62	0.73(-2) = 0.48	0.71(-3) = 0.55	0.47(-4) = 0.76
Transportation	3.15(-1) = 0.08	6.42(-2) = 0.00	5.20(-3) = 0.00	4.54(-4) = 0.00
Law, Crime, and Family Issues	3.58(-1) = 0.06	1.47(-2) = 0.23	1.30(-3) = 0.28	0.91(-4) = 0.46
Social Welfare	0.24(-1) = 0.62	0.02(-2) = 0.98	1.53(-3) = 0.21	1.13(-4) = 0.34
Community Development and Housing Issues	1.48(-1) = 0.23	1.09(-2) = 0.34	0.98(-3) = 0.40	1.89(-4) = 0.11
Banking, Finance, and Domestic Commerce	14.78(-1) = 0.00	8.21(-2) = 0.00	4.35(-3) = 0.01	4.17(-4) = 0.00
Defense	1.81(-1) = 0.18	0.85(-2) = 0.43	0.66(-3) = 0.58	0.46(-4) = 0.77
Space, Science, Technology and Communications	8.42(-1) = 0.00	6.64(-2) = 0.00	4.14(-3) = 0.01	3.33(-4) = 0.01
Foreign Trade	0.26(-1) = 0.61	0.68(-2) = 0.51	0.51(-3) = 0.68	0.34(-4) = 0.85
International Affairs and Foreign Aid	4.90(-1) = 0.03	2.28(-2) = 0.10	1.44(-3) = 0.23	1.66(-4) = 0.16
Government Operations	7.83(-1) = 0.01	3.04(-2) = 0.05	2.22(-3) = 0.09	1.53(-4) = 0.19

Note: Cell entries are F statistics and associated p-values, with degrees of freedom in parentheses, for 1–4 lags.