

Televised Debates and Emotionality in Politics: Evidence from C-SPAN*

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Abstract

We study the effect of televised broadcasts of floor debates on the rhetorical choices of U.S. Congress Members, focusing on a measure of emotionality constructed using computational linguistics methods. First, we show in a differences-in-differences analysis that the introduction of C-SPAN broadcasts in 1979 increased emotionality in the House relative to the Senate, which did not introduce televised floor debates until later. Second, we use exogenous variation in C-SPAN channel positioning as an instrument for C-SPAN viewership by Congressional district, and show that House Members from districts with higher C-SPAN viewership speak with more emotionality in floor debates. Contra accountability models of transparency, however, C-SPAN has no effect on measures of legislative effort on behalf of constituents. We then compare the effects of direct transparency via C-SPAN to that of mediated transparency via local news coverage of Congress. News coverage has the opposite effect of C-SPAN, increasing legislative effort but with no effect on emotional rhetoric. These results highlight the importance of audience and mediation in the political impacts of higher transparency.

Key Words: Political Transparency, Political Rhetoric, U.S. Congress, C-SPAN

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1 Introduction

Politics and television seem inextricably entwined in the U.S. political economy (Lang and Lang, 2018). Yet television is a relatively new invention, and it was just fifty years ago that Congressional floor speeches began broadcasting live on the cable television network C-SPAN. While the effect of television on voters has been studied in different contexts (e.g. DellaVigna and Kaplan, 2007; Lenz and Lawson, 2011), little attention has been given to the effect of television, or to C-SPAN specifically, on politicians and their actions in Congress.

What has been the effect on politicians of televising floor speeches in Congress? C-SPAN (Cable-Satellite Public Affairs Network) is a cable and satellite television network broadcasting the floor debates of U.S. Congress and related content on Congressional activities. The organization was founded in 1975 as a nonprofit public service. Four years later in 1979, the network began broadcasting the proceedings of the House of Representatives on the C-SPAN1 cable channel. C-SPAN2 started transmitting from the Senate in 1986.

We ask whether, by opening a direct and unmediated window on legislators' activity, C-SPAN has had a distinct effect on legislators' behavior compared to other transparency mechanisms, such as newspapers. In standard political agency models, increased transparency improves accountability and disciplines politicians to exert more effort in representing their constituency (e.g. Ferejohn, 1986). Yet a more recent generation of models have pointed to potential political distortions that can be amplified by greater transparency (Stasavage, 2007; Fox and Van Weelden, 2012; Ash et al., 2017; Fehrler and Hughes, 2018; Gradwohl and Feddersen, 2018; Maskin and Tirole, 2019). In particular, when voters observe the deliberation process, rather than its policy outcomes, politicians have incentives to forego actions that would maximize policy utility and use the opportunity to appeal to the electorate instead (Prat, 2005).

In this context, politicians may have strong incentives to use emotional speech that affects voters' evaluations of candidates and policy issues (Webster and Albertson, 2022). We expect politicians to use more emotional rhetoric in Congress when C-SPAN viewership in their electoral districts is higher. At the same time, because C-SPAN increases transparency on the deliberation process more than on its outcomes, we expect no effect on measures of

concrete effort.

We look at the effect of C-SPAN on politicians' use of emotional rhetoric in Congress, applying two different identification strategies to a dataset of politicians' characteristics, rhetorical choices (Gennaro and Ash, 2021), and effort in Congress (Snyder and Strömberg, 2010). We first document the effect of the introduction of C-SPAN1 in the U.S. House of Representatives in 1979, in a differences-in-differences design. Using the U.S. Senate as a control group, where television broadcasts did not start until seven years later in 1986, we show that the introduction of C-SPAN increased emotionality in the House. Supporting analysis suggests that the effect comes both by increasing emotionality for incumbent Congressmen, and by selecting for newly elected Congressmen with a higher baseline level of emotionality.

We then explore the effect of C-SPAN on contemporary politics. Our second approach compares the use of emotional rhetoric by representatives of Congressional districts with different C-SPAN viewership. We produce causal estimates by instrumenting for C-SPAN1 viewership at the district level using the exogenous variation in C-SPAN1 channel positioning. Because televisions start at channel 2 and people surf upward until finding something they want to watch, C-SPAN1 viewership increases when it has a lower channel position. We validate the instrument for this purpose, including documenting a strong first stage and providing evidence for exogenous positioning. In reduced-form and two-stage-least-squares regressions, we show that exogenously higher C-SPAN viewership in a constituency increases emotionality of speeches by the respective House Member. That result is robust to a number of identification checks and specification checks.

We further compare the effects of transparency achieved through C-SPAN versus transparency achieved through newspapers. To this purpose, we adopt the measure from Snyder and Strömberg (2010) on congruence between congressional districts and local media markets. In that paper, the authors show that congruence exogenously increases media reporting about local politicians who, in turn, exert more effort in their legislative activity. While we confirm that newspapers affect measures of effort, we find no effect on emotional rhetoric. On the other hand, we find no effect of C-SPAN on concrete measures of effort. These results suggest that not all forms of transparency are equivalent. When compared to mediated transparency, C-SPAN's unmediated coverage on the legislative process increases emotional

rhetoric with no contemporaneous increase in effort on behalf of constituents.

This paper contributes to several strands of the literature on accountability, televised politics, and the electoral use of emotions. First, these results add to the literature on how public officials respond to greater transparency on their actions and communications. Consistently with the mixed theoretical results, the results from empirical studies also present a mixed picture on how transparency influences the behavior of politicians and public officials. One of the closest papers to ours is again Snyder and Strömberg (2010), who find that higher newspaper coverage improves the effort of House Members on a number of margins. Ash et al. (2017) use Snyder and Stromberg’s newspaper coverage treatment but show that it also increases divisiveness of speech rhetoric. We complement these papers by looking at televised speeches (rather than newspaper coverage) and assessing effects on emotionality (rather than effort measures and partisanship).¹

Second, insights from this paper enrich our understanding of the deep and multifaceted effects of television on voters and politicians. A large literature has documented how television affects political knowledge (Prior, 2006; Barabas and Jerit, 2009), participation (Gentzkow, 2006; Sørensen, 2019), polarization (Durante and Knight, 2012; Campante and Hojman, 2013), and vote choice (DellaVigna et al., 2016; Peisakhin and Rozenas, 2018). However, relatively little is known about the effects of television on politicians. Notable exceptions are works by Clinton and Enamorado (2014) and Arceneaux et al. (2016) who observe that Members of Congress take more conservative positions in roll call votes in response to Fox News in their home district. Our work differs significantly from these papers because C-SPAN broadcasts are unfiltered by journalists. Thus we estimate the effect of transparency separately from the confounding effect of news-network ideology.

Third, this work contributes to the growing literature that investigates the use of rhetorical strategies in politics. It has been shown that rhetorical choices respond to changes in the composition of the electorate, as politicians appeal to different sets of voters (Spirling, 2016; Lin and Osnabrügge, 2018; Bischof and Senninger, 2018; Gennaro et al., 2019). In particular,

¹There are a handful of additional related papers looking at transparency in the bureaucracy rather than legislators. Lim et al. (2015) show that higher newspaper coverage of judges increases sentencing harshness when judges are elected. Hansen et al. (2018) show that higher transparency increases conformity in central bank committee discussions.

emotionality is increasingly attracting the attention of researchers (Webster and Albertson, 2022). Osnabruegge et al. (2021) show that U.K. parliamentarians use more emotive rhetoric in high-profile debates. Boussalis et al. (2021) find that politicians are rewarded for displaying emotional expressions according to gendered-based expectations. Emotional speech is also more likely to be reported by traditional and new media (Bennett, 2016; Brady et al., 2017). Our results complement this literature showing how politicians resort to emotionality in response to increased transparency due to televised debates.

2 Background

Against the backdrop of a large theoretical literature underlining the consequences of transparency, relatively little is known about its empirical effects on politicians’ behavior. There is even less work comparing the distinctive effects of transparency through different media technologies. This section reviews some of that literature to situate our paper’s empirical analysis and contribution.

Theory. A rich theoretical literature has explored the ways that transparency can influence the choices of politicians. In the standard political agency models, transparency affects politicians’ behavior through stronger electoral accountability (e.g. Ashworth, 2012). To the extent that transparency reduces the cost of monitoring politicians, classical principal-agent models predict that transparency should increase voters’ ability to hold politicians accountable, ultimately leading to more effort on behalf of constituents (Ferejohn, 1986). Correspondingly, higher transparency – and the associated expectation of greater accountability – could influence the types of candidates who run for office (e.g. Downs, 1957). Politicians who have a lower cost of effort for constituents would be more likely to run under higher transparency.

More recently, a number of theoretical approaches have highlighted the limitations of the pure accountability model by showing that the welfare effects of transparency may be context-dependent. For example, in the model by Prat (2005), transparency is beneficial when it allows voters to observe the outputs of politicians’ actions. However, transparency on the actions themselves – i.e., on the legislative process – can create distortions. In particular,

transparency on actions can introduce incentives for politicians to conform to the a priori preferred action, rather than to use private information (see also Stasavage, 2007). Similarly, the model in Ash et al. (2017) highlights that transparency can increase the signaling value of taking divisive policy positions. In Patty (2016), transparency increases the incentives to obfuscate public debate by obstructing already approved policies.

Evidence. The best evidence on the accountability process is Snyder and Strömberg (2010). That paper shows that politicians indeed respond to more newspaper coverage in their home districts. Consistent with accountability models, legislators increase legislative effort and performance on a number of margins, particularly in activities that bring direct benefits to the constituency. Similarly, Gentzkow et al. (2011) find that more newspaper coverage leads to higher political knowledge and voter participation, which are necessary conditions for accountability. For television (as opposed to newspapers), however, there is not much evidence for an accountability effect. This difference could be explained by television having less of a focus on political news (e.g. Gentzkow, 2006; Sørensen, 2019).

Empirical evidence on the potential costs of transparency includes Ash et al. (2017), who show that in districts with higher news coverage, the associated House Member uses more divisive, partisan rhetoric. Hansen et al. (2018) shows in the context of a central bank committee that higher transparency increases conformity in discussions. In Benesch et al. (2018), higher transparency on Swiss parliament actually increased party conformity. Finally, Harden and Kirkland (2021) find that transparency laws in U.S. states had no effect on legislative outcomes such as productivity, polarization, and delay.

Emotional Rhetoric. While we assess a number of outcomes, the empirical focus of this paper is on emotional rhetoric. There is substantial evidence that eliciting emotions affects voters' political preferences and behavior, including political participation, vigilance, and information acquisition (e.g. Sullivan and Masters, 1988; Marcus and MacKuen, 1993; Marcus et al., 2000; Brader, 2005; Valentino et al., 2011). Emotional framing can inform voters' opinions on policy issues (Gross, 2008; Brader et al., 2008; Renshon et al., 2015), can be used strategically to target specific subgroups in the wider audience of voters (Gault and Sabini, 2000; Loewen et al., 2017), and can serve to communicate major consensual values (Jerit,

2004). Thus, political persuasion of voters likely entails emotive language.

The case of C-SPAN. There are two main models for how higher transparency due to C-SPAN would influence legislative behavior. On the one hand, C-SPAN could increase accountability and improve legislator performance on behalf of constituents, as in Ferejohn (1986) or Snyder and Strömberg (2010). Alternatively, C-SPAN might introduce the "wrong" kind of transparency by providing information on the policy-making process rather than on outcomes (Prat, 2005), or otherwise amplifying pressures for politicians to pander or posture (Fox, 2006; Stasavage, 2007; Patty, 2016; Ash et al., 2017).

Our expectations are guided by two questions. First, what is the audience for C-SPAN? Second, does C-SPAN provide information on policy inputs or policy outputs?

The first pivotal dimension of transparency is the audience. That is, we must ask *who* is getting more access on a politician's actions. That audience might be other politicians, other public officials like inspectors or bureaucrats, lobbyists, policy experts, campaign donors, advocates, journalists, or voters. When looking at the impacts of transparency on actions or rhetoric, the associated audience will make a big difference.

C-SPAN is a basic cable network, accessible by tens of millions of subscribers since the 1980s. C-SPAN's core programming is live coverage of the U.S. House and Senate, with C-SPAN1 covering the House and C-SPAN2 covering the Senate. When the House or Senate are not in session, C-SPAN channels broadcast other public affairs programming and recordings of previous events.

C-SPAN establishes a direct communication line between politicians and voters. This changes the composition of the audience for floor speeches, which is no longer reserved to fellow Members of Congress, government actors, and political journalists. While voters could always learn about speech content indirectly through news media reports about the speeches, it was only after the introduction of C-SPAN that voters could directly and easily observe the speeches of their congressional representatives. With the change of audience, congressional speeches became a device for appealing to voters directly through the television. In particular, if voters respond to emotionality more positively than the traditional pre-television audience, then politicians might respond to increased television exposure of speeches with increased

emotionality in their speeches.

Second, C-SPAN provides programming on both policy inputs and policy outputs. In terms of outputs, they report on roll call votes and the outcomes of those votes in terms of enacted bills. In terms of inputs, they show the floor debates about legislation. The latter takes up more time, by construction.

This focus on inputs is amplified by the lack of mediation (unlike newspapers, where journalists focus on newsworthy content). C-SPAN offers complete coverage on the congressional debates, without content editing nor selective coverage. This choice delivers lengthy floor discussions that are generally disregarded by other news sources, and an editorial focus that privileges the decision-making process over its results.

Based on the discussion above, the transparency achieved through C-SPAN differs significantly from transparency achieved through newspapers. In the case of C-SPAN, the extensive coverage of the political process limits focus on outcomes, coupled with the substantial change in audience tilt the balance of incentives in favor of emotive rather than deliberative rhetoric. In the case of newspapers, the mediated nature of communication strikes the balance in favor of effort.

3 Data

We draw from registry data and other relevant studies to compile two rich datasets of elected representatives’ rhetoric features, legislative effort, personal and district characteristics. The first dataset covers all speeches delivered in the Senate and the House around the first introduction of C-SPAN (1974-1985). The second dataset covers all speeches delivered in the House of Representatives between 1998 and 2014, as well as measures of legislative effort between 1998 and 2004. The paragraphs below provide additional detail.

C-SPAN channel position. We have information on local channel positions for C-SPAN1 and C-SPAN2 from Nielsen. The data include information about the area served by each cable system at the zip-code level between 1998 and 2004. Adapting the approach from Galletta and Ash (2020), which aggregates the data by county, we aggregate the data by Congress-

sional election district. Specifically, we take the district-level average channel positions across zip codes, weighting zip codes by population size. To better isolate cross-sectional (rather than time-varying) variation in the channel position, we produce a time-invariant channel *Position* by Congressional district by averaging over the available years 1998-2004. To assist interpretation of coefficients, we standardize the channel position by subtracting the mean and dividing by the standard deviation.

C-SPAN Viewership. Next, we have zipcode-level viewership of C-SPAN1, also provided by Nielsen. *Viewership* is measured as the average share of television-watching time in a zip code tuned into C-SPAN1. In our regressions, we use viewership from 2004, aggregated by election district in the same way as channel positions. For interpretability, we again standardize viewership to mean zero and standard deviation one.

Congruence. We obtain a district-level measure of transparency based on newspaper reporting from Snyder and Strömberg (2010). In particular, *Congruence* measures the geographical overlap between newspaper markets and U.S. congressional districts. In their paper, they demonstrate that higher congruence corresponds to exogenously higher newspaper coverage of the local Member of Congress. We adapt the congruence measure to our analysis by replicating the same aggregation rules that we use for C-SPAN – i.e., we produce a time-invariant congruence measure by Congressional district by averaging over the years 1998-2004.

Emotionality. The measure of *Emotionality* in congressional floor speeches comes from Gennaro and Ash (2021). This approach uses word embedding, a tool from natural language processing which represents semantic dimensions in language as geometric dimensions in a vector space. The method transforms words to vectors, where similar words tend to co-locate and directions in the space (dimensions) correspond to semantically meaningful concepts (Collobert and Weston, 2008; Mikolov et al., 2013; Pennington et al., 2014). In brief, the method works by taking validated word lists for emotion and reason and constructing the poles as the average vectors for these semantically coherent word groups. The relative emotionality of a word or a document is the proximity to the emotion pole, relative to the

reason pole. Gennaro and Ash (2021) compute scores for 6 million floor speeches reported in the *U.S. Congressional Record* for the years 1858 through 2014 and extensively validate those scores.

Legislator Behavior and Characteristics. We obtain measures of legislators’ behavior from Snyder and Strömberg (2010), for the period 1998-2004. In particular, we borrow their measures of party loyalty, effort, and committee membership. *Party Loyalty* is defined at the politician-session level as the percentage of roll call votes where the representative votes with the party majority. *Effort* is measured as the number of witness appearances before a congressional hearing (*Witnesses*), or the number of appearances before the Appropriations or Ways and Means committees, which have a considerable direct influence over spending, taxes, and allocation of funds (*Budget Witnesses*). Committee membership distinguishes between participation in *Constituency-oriented* committees and *Policy-oriented* committees.

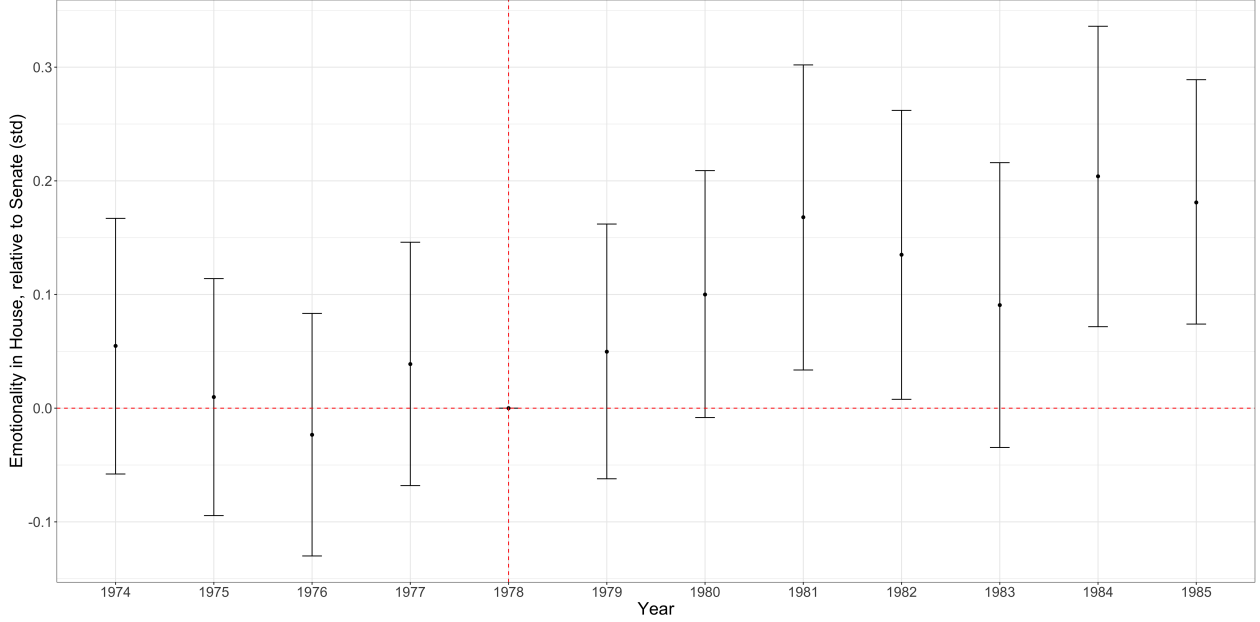
We combined these data with additional detailed information about U.S. House Members and Senators from Gennaro and Ash (2021). This dataset includes personal characteristics such as demographics and variables related to the political career. As a measure of partisanship of voting for each Congress Member and year, we include DW-NOMINATE scores. We derive politician’s *Extremism* as the square of the session-level DW-NOMINATE score.

Other text measures. We collect a number of other measurements from the text for use in the analysis from Gennaro and Ash (2021). In particular, we collect information on speech topics (obtained with latent dirichlet allocation or LDA, see e.g. Blei 2012). For ease of interpretation, we inspected the individual topics and aggregated them into eleven larger categories. Further, we have measures of readability by speech: average number of words per sentence, and characters per word.

4 Effect of C-SPAN’s Introduction in the House

This section investigates the effect of television on emotionality in Congress with a differences-in-differences design. We exploit the staggered timing in the introduction of C-SPAN in the House (1979) and in the Senate (1986). We ask whether House members in-

Figure 1: EMOTIONALITY AND C-SPAN1 INTRODUCTION



Difference-in-Differences estimates of the effect of C-SPAN on Emotionality (equation 1). The horizontal axis indicates Years around the first introduction of C-SPAN1 in the House of Representatives (1979); the vertical axis reports the difference in emotionality between the House and the Senate. Vertical lines give 95% confidence intervals.

creased emotionality relative to their colleagues in the Senate in the period after they were exposed to television. We then compare the within-member incentive effects for incumbent politicians to the across-member selection effects of new versus incumbent politicians.

We estimate the following event-study model:

$$Y_{ijt} = \alpha + \sum_{m=-5}^6 \beta_m H_j \times L_{1979+m} + H_j + \tau_t + \epsilon_{ijt} \quad (1)$$

where Y_{ijt} is emotionality in speech i , chamber j , year t . H_j is a dummy equal to one if the speech is in the House, zero in the Senate. L_{1979+m} are dummies for leads and lags around 1979, the year C-SPAN was introduced in the House. The year 1978 is the left-out category. τ_t are year fixed effects, capturing Senate averages for the leads and lags. Standard errors are clustered at the speaker level.

Figure 1 reports the coefficient estimates and 95% confidence intervals from Equation (1). In years preceding C-SPAN1, there is no effect, suggesting that the House and the Senate

were on parallel trends in emotionality. In the years after, however, and especially starting in 1981, a difference between the chambers opens up and becomes statistically significant. The introduction of televised debates increased emotionality in the House of Representatives.

5 C-SPAN Viewership and Emotionality

While the introduction of C-SPAN1 seems to drive a diverging emotive trend in the House relative to the Senate, this effect may be confounded by other contemporaneous changes affecting the House. The introduction of television may have effects on speeches beyond its effect on greater transparency to voters. For example, it could be that the presence of cameras affects rhetoric directly, regardless of whether voters are watching.

As an alternative approach to identify the effect of transparency on emotionality, we use an instrument for local viewership of C-SPAN1 by congressional district. This section outlines this second identification strategy and reports the associated results.

C-SPAN channel position as an instrument for viewership. Our second identification strategy is instrumental variables. We instrument for local viewership of C-SPAN1 by congressional district using the channel position. As first introduced in Martin and Yurukoglu (2017) for cable news network, variation in cable channel positioning significantly shifts viewership because viewers tend to start at the bottom of the lineup and surf upward until finding something to watch.

Further, due to the arbitrary and localized process of selecting channel positions, those positions are exogenous to relevant district and politician characteristics. The lineup positions assigned to each channel depends on the time in which the national media producer joined the local cable system. New channels are most of the time positioned sequentially, and further, when networks are dropped then newly open positions can be filled. Therefore, the numerical order of the channels varies depending on the cable system considered. Once set at the introduction of the channel into a cable system, the positioning rarely changes over time.

We adapt the channel position instrument approach to the case of C-SPAN and U.S.

Congress. As discussed in more detail in Section 3, we calculate average C-SPAN channel positions and viewership by Congressional District using data starting in 1998. We then estimate causal effects using cross-sectional variation in the channel position within the same state and same year. That is, we compare outcomes for House Members from the same state in the same year, but differing in the average channel position of C-SPAN1 in their home district. The emotionality analysis includes all speeches pronounced by Democratic or Republican House Members, between 1998 and 2014. Senators are not a part of this analysis because they are elected at the state level, and hence we cannot exploit variation of the instrument across locally contingent areas. The main summary statistics for all variables included in this analysis are reported in Appendix Table A12.

First stage. We begin with the first stage effect of C-SPAN channel position on C-SPAN viewership. While channel position has been used as an instrument for cable news viewership (Martin and Yurukoglu, 2017), it has not been used to analyze C-SPAN. It is not obvious that the first stage should hold, given that C-SPAN is a public broadcaster with relatively low viewership. Formally, we estimate:

$$V_{js} = \alpha + \psi Z_{js} + \tau_{st} + X'_{ijst}\beta + \epsilon_{ijst} \quad (2)$$

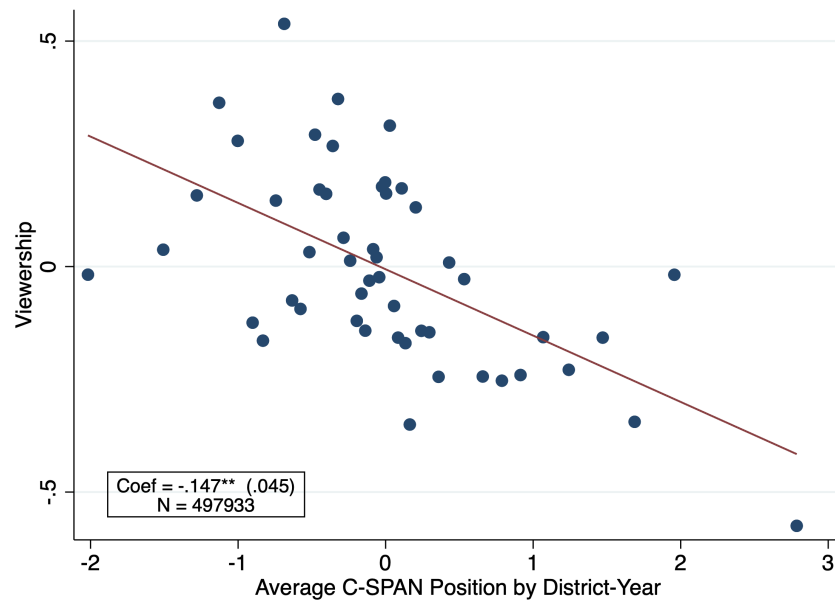
where V_{js} is C-SPAN viewership in district j and state s , Z_{js} is the C-SPAN channel position number in district j , τ_{st} is a state-year fixed effect, and X'_{ijst} includes additional covariates to be enumerated below. Standard errors are clustered by House member.²

The first stage has a causal interpretation under conditional exogeneity of the channel position Z_{js} with regard to viewership V_{js} . In that case, the estimate $\hat{\psi}$ gives the counterfactual prediction for how much viewership changes (in standard deviations) in response to a one-standard-deviation increase in the channel position. Given that a lower channel position makes a network easier to watch, we expect $\hat{\psi} < 0$.

Figure 2 shows a binned scatter plot for the relationship between viewership and the C-SPAN1 channel position in the associated electoral district, residualized on state-year fixed effects. As the channel position increases, viewership of CSPAN in the district decreases with

²Standard errors are similar when clustering by district.

Figure 2: FIRST STAGE: VIEWERSHIP AND C-SPAN1 CHANNEL POSITION



Binned scatter plot of C-SPAN1 viewership and C-SPAN1 channel position. The horizontal axis reports the average C-SPAN1 channel position in the speaker's district-year (standardized); the vertical axis reports the average viewership in the speaker's district (standardized). State-year fixed effects absorbed.

$\hat{\psi} = -0.147$. These results are confirmed in regression analysis reported in Appendix Table A1. In the 2SLS regressions below, we will report Kleinbergen-Paap cluster-robust first-stage F-statistics and they are consistently above 10.

Balance Tests. The main threat to identification is that the instrument is endogenous with speech emotionality. It could be that emotionality across Representatives correlates with other unobserved local characteristics that are endogenous with the instrument. To address this possibility, we test the balance of the channel position across a number of district characteristics, as well as average demographic characteristics of the members of Congress elected in those districts.

Appendix Table A5 reports these balance checks. We see that, consistent with an exogenous channel position, the coefficients on almost all covariates are statistically insignificant. A handful of covariates are significant at the 5 percent level, as one would expect due to chance. However, we include all those controls in the main Tables 1 and 2, individually and interacted with time trends, and results do not change. Further, none of these variables are selected when we run lasso with emotionality as the outcome.

Reduced-form effect of channel position on emotionality. Next, we estimate the reduced form model, regressing emotionality on the exogenous instrument:

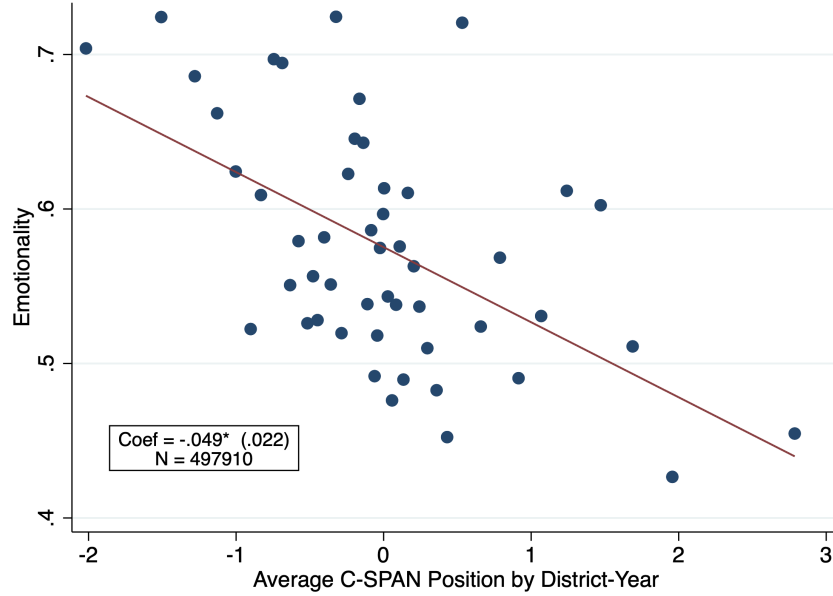
$$Y_{ijst} = \alpha + \phi Z_{js} + \tau_{st} + X'_{ijst} \beta + \epsilon_{ijst} \quad (3)$$

where the emotion outcome Y_{ijst} is for speech i , district j , state s , time t . The other items are the same as with the first stage. Again, standard errors are clustered by member.

Under conditional exogeneity of the channel position Z_{js} with regard to speech emotionality Y_{ijst} , $\hat{\phi}$ estimates the change in emotionality (in standard deviations) due to a one-standard-deviation increase in the channel position. Based on the differences-in-differences estimates from Section 4, we expect higher C-SPAN viewership to increase emotionality. Given the negative first stage, then, we also expect a negative reduced-form estimate, $\hat{\phi} < 0$.

To visualize the reduced-form relationship, Figure 3 shows a binned scatter plot for the relationship between emotionality in speeches and the C-SPAN1 channel position in the

Figure 3: REDUCED FORM: EMOTIONALITY AND C-SPAN1 CHANNEL POSITION



Binned scatter plot of emotionality and channel position. The horizontal axis is the average C-SPAN1 channel position in the speaker’s district-year (standardized); the vertical axis is the average emotionality score by bin (standardized). State-year fixed effects absorbed.

associated speaker’s electoral district, with both residualized on state-year fixed effects. As the district’s channel position increases, speeches pronounced by the respective Member of Congress display lower emotionality ($\hat{\phi} = -0.049$). Combined with the negative first stage, we thus have some initial evidence for a causal effect of C-SPAN viewership increasing emotionality.

The visual reduced-form relationship is confirmed by regression estimates reported in Table 1. A simple regression of emotionality on C-SPAN1 channel position and state-year fixed effects shows a negative relationship, similar to the binscatter. A one-standard-deviation decrease in the channel position corresponds to a .05-standard-deviation increase in emotionality. The estimated coefficient is robust in magnitude and significance to adding district controls for population and demographics (Column 2) or education and income (Column 3).

The remaining columns add additional covariates which could be mediators in the sense that they are affected by C-SPAN channel position and viewership. First, adding member-level covariates for gender, race, religion, age, and party (Column 4) shrinks the coefficients

Table 1: REDUCED FORM: EMOTIONALITY AND C-SPAN1 POSITION

Emotionality	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Position	-0.049** [0.022]	-0.052** [0.020]	-0.058*** [0.021]	-0.048*** [0.018]	-0.046*** [0.014]	-0.029*** [0.009]	-0.029*** [0.009]	-0.025*** [0.009]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Urban		✓	✓	✓	✓	✓	✓	✓
Income-Educ			✓	✓	✓	✓	✓	✓
Individual				✓	✓	✓	✓	✓
Speech					✓	✓	✓	✓
Topics						✓	✓	✓
Interacted							✓	
Lasso								✓
Mean DV	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Observations	497910	497910	497910	497910	497910	497910	497910	497910

Notes. Each column shows the OLS regression of the emotionality score in a given speech (standardized) on the average C-SPAN1 channel position in the speaker's district (standardized). The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives between 1998 and 2014. All columns include State-year fixed effects. *Urban* indicates the inclusion of controls for population (log), density (log), the share of urban population, of Hispanic, Asian, black and white population, of women, and of working age population. *Income-Educ* includes the share of college educated, high-school dropouts, food stamp recipients, and median household income (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native), and controls for age and age squared. *Speech* indicates controls for speech length (log), word length (log), and sentence length (log). *Topics* indicates topic fixed effects. *Interacted* indicates that *Urban* and *Income-Educ* controls are interacted with time trends. *Lasso* indicates the inclusion of controls selected with the post-double selection procedure: speech length (log), word length (log), speaker's gender, party, and age. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

but only slightly, meaning that selection for observable member characteristics does not significantly explain the C-SPAN effect. Next, to check whether the change in the measurement of emotionality is driven by other rhetorical choices, Column 5 includes as covariates speech length and readability metrics (word and sentence length). Similar with member characteristics, the speech covariates only slightly decrease the coefficient magnitude. As shown in Column 6, however, including topic fixed effects as covariates does make a big difference in the estimated coefficient magnitude, reducing it by almost half. This means that the C-SPAN effect is driven substantially, but not wholly, by shifts to more emotional topics.

Two stage least squares specification. Next, we estimate the two-stage-least-square specification. We regress emotionality of a speech on C-SPAN1 viewership in the speaker’s home district:

$$Y_{ijst} = \alpha + \rho \hat{V}_{js} + \tau_{st} + X'_{ijst} \beta + \epsilon_{ijst} \quad (4)$$

where viewership $\hat{V}_{js}$ is instrumented by the channel position in the congressional district, as shown in the first stage eq. 2. To assist interpretability, the outcome, the endogenous treatment variable, and the instrument are all standardized. Standard errors are clustered by speaker. The estimate $\hat{\rho}$ gives the local average treatment effect of higher viewership on emotionality due to exogenous shifts in the channel position.

The 2SLS estimates are reported in Table 2. Column 1 reports the simple OLS estimates, with state-year fixed effects. The correlation between C-SPAN viewership and emotionality is positive, yet small in magnitude and not statistically significant. Columns 2 to 9 report the 2SLS estimates. In the baseline regressions of emotionality on viewership and state-year fixed effects (Column 2), population controls (Column 3), or education/income controls (Column 4), we see a positive and significant estimate. A one standard-deviation increase in viewership corresponds to a 0.33 to 0.42 standard-deviation increase in emotionality. As with the reduced form (Table 1), adding the mediator covariates shrink the coefficient magnitude but the estimate remains positive and significant. Meanwhile, there is a strong and growing first stage F-statistic.

Notably, the OLS estimates for emotionality and viewership are negatively biased – they underestimate the effect of C-SPAN on House Member emotionality. There could be many

Table 2: 2SLS: EMOTIONALITY AND C-SPAN1 VIEWERSHIP

	(1) OLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS	(7) 2SLS	(8) 2SLS	(9) 2SLS
Viewership	0.027 [0.018]	0.330** [0.163]	0.418** [0.187]	0.401*** [0.154]	0.313** [0.124]	0.299*** [0.104]	0.187*** [0.065]	0.187*** [0.065]	0.174** [0.078]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓	✓
Urban			✓	✓	✓	✓	✓	✓	✓
Income-Educ				✓	✓	✓	✓	✓	✓
Individual					✓	✓	✓	✓	✓
Speech						✓	✓	✓	✓
Topics							✓	✓	✓
Interacted								✓	
Lasso									✓
KP F-stat		10.480	10.111	15.954	17.940	17.909	18.169	18.174	9.262
Mean DV	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Observations	497910	497910	497910	497910	497910	497910	497910	497910	497910

Notes. Each column shows the regression of the emotionality score in a given speech (standardized) on the C-SPAN1 viewership in the speaker's district (standardized). Column 1 reports the OLS estimates; columns 2 to 9 report 2SLS estimates, where viewership is instrumented with CSPAN1 channel position in the same district (standardized). The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014. All columns include state-year fixed effects. *Urban* indicates the inclusion of controls for population (log), density (log), the share of urban population, of Hispanic, Asian, black and white population, of women, and of working age population. *Income-Educ* includes the share of college educated, high-school dropouts, food stamp recipients, and median household income (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. *Speech* indicates controls for speech length (log), word length (log), sentence length (log). *Topics* indicates topic fixed effects. *Interacted* indicates that *Urban* and *Income-Educ* controls are interacted with time trends. *Lasso* indicates the inclusion of controls selected with the post-double selection procedure, i.e. speech length (log), word length (log), speaker's gender, party and age. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

reasons for such a bias. For instance, it could be that districts with more experienced Congressmen tend to watch C-SPAN more because the politician is more popular, yet more experienced Congressmen are less emotive. Further, it could be due to a local average treatment effect where the districts that respond to the channel position also have Congressmen that are more sensitive in their rhetorical choices to television visibility.

While we cannot pin down the exact reasons behind the negative bias in the OLS, we highlight that this finding is consistent with standard political accountability models. In the OLS estimates, C-SPAN viewership captures latent constituency characteristics, such as interest in politics. Politically interested constituencies not only watch C-SPAN more, but they are also more likely to hold their representatives accountable for their policy decisions. These factors should lead to positive selection and a disciplining effect on politicians. To the extent that emotionality is used as a substitute to effort in achieving political persuasion, we would expect that higher constituency political interest correlates with lower use of emotionality. Emotionality hence increases when C-SPAN viewership is driven by conditions that are exogenous to local political interest such as, indeed, the channel position.

Robustness Checks. In the Appendix, we provide further supporting evidence on the exogeneity of the instrument by performing two placebo analyses. First, in Appendix Figure A4 and Appendix Table A3, we show that there is no effect when regressing emotionality in the two decades before the introduction of C-SPAN1 on C-SPAN1 channel position. The resulting reduced-form estimate is positive (flipped sign) and not statistically significant. This means that the instrument is not selected with pre-existing trends in the use of emotional rhetoric across electoral districts. Second, we run the reduced form specification using the channel position for C-SPAN2 (rather than C-SPAN1) as the instrument. As C-SPAN2 broadcasts floor debates from the Senate, we should expect no effect on emotionality for House members. Estimates reported in Appendix Table A4 show that there is indeed no effect of C-SPAN2 on emotionality in the House.

Then, we provide two further specification checks. First, we replicate the analysis using congressional districts as the unit of analysis, collapsing all our variables as averages at the district-year level. Appendix Figure A5 and Appendix Table A6 show that results are

substantially unchanged. Second, given the skewed distribution of the C-SPAN channel positions and viewership, we apply the inverse hyperbolic sine transformation to both variables and replicate the main results in Appendix Figure A3 and Table A2.

Other outcomes. C-SPAN may affect different aspects of political rhetoric besides emotionality. In particular, linguistic sophistication may be affected by the need to address a new public (Benoit et al., 2019). For instance, Spirling (2016) has shown that enfranchisement led elected politicians to use simpler language in the UK parliament, with the intent of addressing the masses.

We test whether C-SPAN has a broader effect on language in Appendix Table A8. The results show that television exposure has no effect on sentiment, speech length, and average word length (a measure of linguistic complexity). However, more visibility does increase the number of speeches given, and the average length of sentences within speeches. The effect on number of speeches is perhaps not surprising, as higher C-SPAN viewership would increase the electoral returns to floor speaking time.

Our regression analysis showed that part of the effect on emotionality is due to shifts in speech topics. Appendix Table A9 shows that more television viewership decreases the number of speeches dedicated to commemorating colleagues (Tribute), while it increases the probability that a politician talks about nationalistic topics (National Narrative), such as the American history and heritage, and party politics. These results are interesting and support the interpretation that C-SPAN increases the weight that House Members put on voters as a potential audience, rather than other House Member colleagues. Comparing the C-SPAN effect by topic, we observe effects across a wide range of topics.

Finally, while television seems to increase the probability of electing more left-wing and more educated politicians (Appendix Table A10), there is no effect on other demographic variables such as age, gender, race, or religion (Appendix Table A11).

6 Direct versus Mediated Transparency on Politicians

In Section 2, we made a distinction between direct transparency – that is, increasing direct access of voters to politician activities – and mediated transparency – that is, increased access to politician activities via journalists. In this section, we compare the effect of C-SPAN – an increase in direct transparency – to higher local newspaper coverage – an increase in mediated transparency. To examine the latter, we draw on Snyder and Strömberg (2010), which showed that congruence between media markets and electoral districts exogenously increases the newspaper coverage of the local Member of Congress. The local representative, in turn, exerts more effort in promoting the interests of her constituency. In this sense, newspaper coverage achieves the positive effects of monitoring as laid out in classical political accountability models. We show that newspaper coverage primarily affects effort, while C-SPAN primarily affects rhetoric.

Media-Market Congruence and Emotionality. First, we ask if more newspaper coverage, measured as congruence, pushes the local representative to use more emotionality in Congress. To do that, we estimate the reduced form model (5) while substituting the C-SPAN channel position with Snyder and Strömberg’s (2010) measure of Congruence, described in Section 3. As shown in Appendix Figure A6 and Appendix Table A7, there is no effect. Unlike the direct transparency from C-SPAN, the mediated transparency from local news coverage does not change emotionality of House Members.

C-SPAN, Congruence, and Politicians’ Behavior. Next we explore the effects of both newspaper coverage and C-SPAN on the behavior of politicians. As done in Snyder and Strömberg (2010), we look at party loyalty, effort, and committee choices. We estimate the following equation, at the politician-session level:

$$Y_{ijst} = \alpha + \phi T_{jst} + \tau_{st} + X'_{ijst}\beta + \epsilon_{ijst} \quad (5)$$

where Y_{ijst} is the outcome for representative i , in district j , state s , and congress session t ; T_{js} is either C-SPAN channel *Position* or *Congruence* in district j state s ; τ_{st} is a state-year

fixed effect, and X'_{ijst} includes additional covariates to be enumerated below. Standard errors are clustered by House member.

Table 3 reports the results for the full set of outcome variables and treatment variables. Panel 1 looks at roll call voting and, in particular, at ideological *Extremism* and a direct measure of *Party Loyalty*. Both measures are based on roll-call votes, as described in Section 3. Congruence has a negative effect on political extremism, consistent with an alignment to the relatively moderate median constituent. Similarly, congruence negatively affects party loyalty. Meanwhile, we find no effect of C-SPAN on the roll-call vote outcomes.

Panel 2 looks at effort and, in particular, at the number of representatives' *Witnesses* in front of Congress committees, and at the budget-related committees in particular (*Budget Witnesses*). Congruence has a positive effect on effort, as shown by the significant positive effect on the number of Witnesses. Here again, C-SPAN has no effect on effort.

In Panel 3, we report results for committee membership and specifically at the representatives' participation in committees oriented towards appropriating funds for their constituency rather than broader policy-oriented committees. Congruence has a positive effect on participation in *Constituency-Oriented* committees, while a negative one on *Policy-Oriented* committees. In this case, C-SPAN has no effect on participation on policy-oriented committees, but it does have an effect on constituency-oriented ones. Because this is the reduced-form, a negative coefficient means that higher C-SPAN viewership increases attendance on constituency-oriented committees.

This analysis refines the message in Snyder and Strömberg (2010) that higher transparency increases politicians' effort to represent constituency interests. While that does occur for newspaper coverage, transparency achieved through C-SPAN does not have the same effect in disciplining politicians. This difference is likely due to the differences in the audiences for the two treatments. C-SPAN gives direct access to voters to the policy-making process. Media congruence gives indirect transparency, mediated by politics journalists who have a greater understanding of and focus on policy outcomes. This evidence is consistent with the argument by Prat (2005) that increased direct access on the policy-making process could be the "wrong kind" of transparency. Rather than increasing accountability for good policy decisions that benefit constituents, televising debates encourages politicians to engage

Table 3: POLITICIANS' BEHAVIOR UNDER CONGRUENCE AND C-SPAN

Panel 1: Party Loyalty								
	Extremism				Roll Call Votes			
	T = Congruence		T = C-SPAN		T = Congruence		T = C-SPAN	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
T	-0.143*** [0.051]	-0.116** [0.058]	0.053 [0.040]	0.021 [0.035]	-0.264*** [0.056]	-0.265*** [0.063]	0.027 [0.056]	0.011 [0.052]
Obs	2934	2934	2850	2850	1331	1331	1331	1331
Panel 2: Legislative Effort								
	Witnesses				Budget Witnesses			
	T = Congruence		T = C-SPAN		T = Congruence		T = C-SPAN	
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
T	0.140** [0.066]	0.165** [0.077]	-0.013 [0.049]	-0.020 [0.050]	0.043 [0.066]	0.094 [0.076]	0.036 [0.051]	0.027 [0.049]
Obs	1331	1331	1331	1331	1331	1331	1331	1331
Panel 3: Committee membership								
	Constituency-Oriented				Policy-Oriented			
	T = Congruence		T = C-SPAN		T = Congruence		T = C-SPAN	
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
T	0.261*** [0.065]	0.208*** [0.071]	-0.112** [0.054]	-0.112** [0.051]	-0.128** [0.059]	-0.130** [0.066]	0.058 [0.056]	0.048 [0.053]
Obs	1323	1323	1323	1323	1331	1331	1331	1331
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Individual		✓		✓		✓		✓

Notes. Each entry corresponds to a separated OLS regression of the standardized dependent variable on transparency (T). $T = \text{Congruence}$ indicates that transparency is *Congruence*, $T = C - \text{SPAN}$ indicates that transparency is the C-SPAN channel position. The dependent variables are *Extremism*, *Party Loyalty*, *Witnesses*, *Budget Witnesses*, *Distribution Committee*, *Policy Committee*. The sample is composed of all Democrat and Republican Members of the House of Representatives, between 1998 and 2014 in Columns 1 to 4. The sample is restricted to 1998 to 2004 in all other columns. All columns include State-year fixed effects. *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

in more emotive rhetoric directed at pandering to or posturing for constituents.

7 Conclusion

Television is an emotional medium. In turn, we find that increased visibility of Congress Members via television is associated with more emotional rhetoric. The effect holds for two identification strategies and includes both a selection effect and an incentive effect. Further, we compare direct transparency through televised debates to mediated transparency through news coverage, and the effects are different. While C-SPAN increases emotionality of rhetoric, newspaper coverage increases legislative effort on behalf of constituents.

This work adds to the literature on media coverage and political accountability (Gentzkow, 2006; Snyder and Strömberg, 2010; Strömberg, 2015). We show that transparency through direct television broadcasts affects rhetorical choices. To the extent that emotionality increases polarization, this could be another channel for TV to increase divisiveness in politics.

This paper invites future work in a number of directions. The use of channel position as an instrument for C-SPAN is novel and could be used for other research questions about the effect of televised debates, for example about local knowledge of politics. Further, television exposure might have an interaction effect with the electoral cycle. These are promising areas for future analysis.

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Emotion and Reason in Political Language

Supporting Information

A Selection versus Incentives in C-SPAN Introduction

The C-SPAN effect on emotionality could come from two sources. For one, it may be driven by Members of Congress changing their behaviour in response to the introduction of C-SPAN. Alternatively, it could be due to the selection of more emotive members as a consequence of the new environment. To disentangle these two effects, we use an alternative difference-in-differences model to get at the selection channel based on member starting year.

In particular, the first post-CSPAN1 election occurred in 1980. Hence, the 97th Congress taking office in 1981 is the first one containing new politicians that ran and won under the new information environment. To get at the selection effect, we compare House Members first elected in a given year to Senators first elected in the same year.³ Formally, we estimate:

$$Y_{ijt} = \alpha + \sum_{m=-3}^2 \beta_m H_j \times C_{97th+m} + H_j + \sum_{m=-3}^2 C_{97th+m} + \tau_t + \epsilon_{ijt} \quad (6)$$

where now C_{97th+m} are dummies for leads and lags in the politician's first Congress session, relative to the 97th Congress. The 95th Congress is the left-out category.

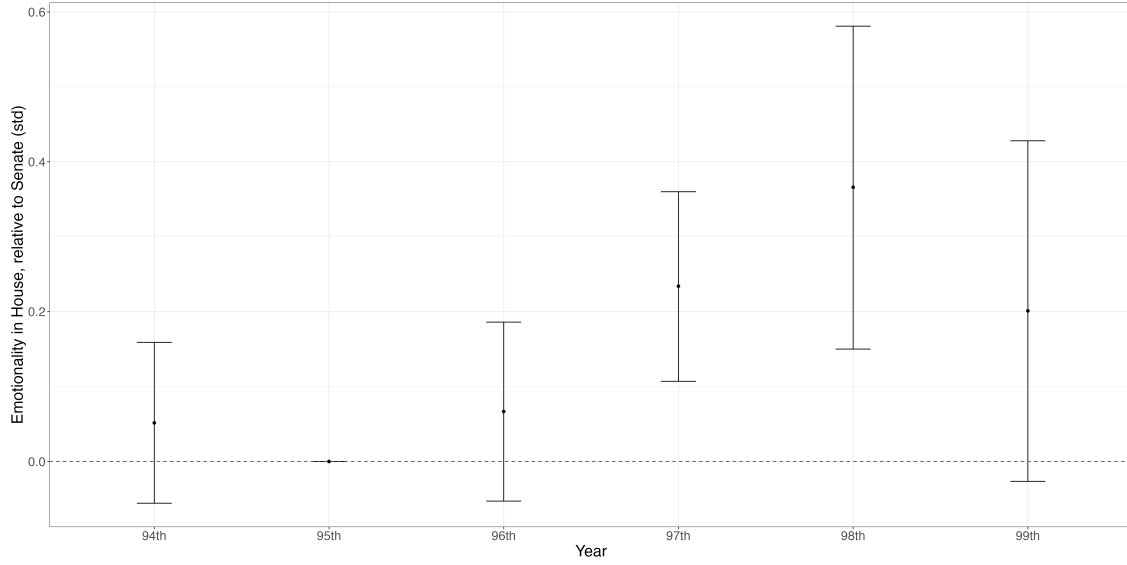
The selection results are reported in Figure A1. For representatives first joining in the pre-CSPAN Congresses (96th and before), there is no difference between the House and the Senate, consistent with parallel trends in starting year. However, House Members who are first elected after C-SPAN1 was introduced (in the 97th Congress) use significantly more emotionality than Senators first elected in that same election cycle.

Meanwhile, to look for an incentive effect that changes the emotionality of incumbent politicians, Appendix Figure A2 shows the first event-study specification from equation 1 but limited to the sub-sample of Congress Members elected in 1978 or earlier. While we still get positive coefficients, they are noisier and not all significant.

Overall, this analysis suggests that C-SPAN increased emotionality through both selection and incentive effects. First, it selected for more emotive Congressmen. Second, the incumbents became more emotive.

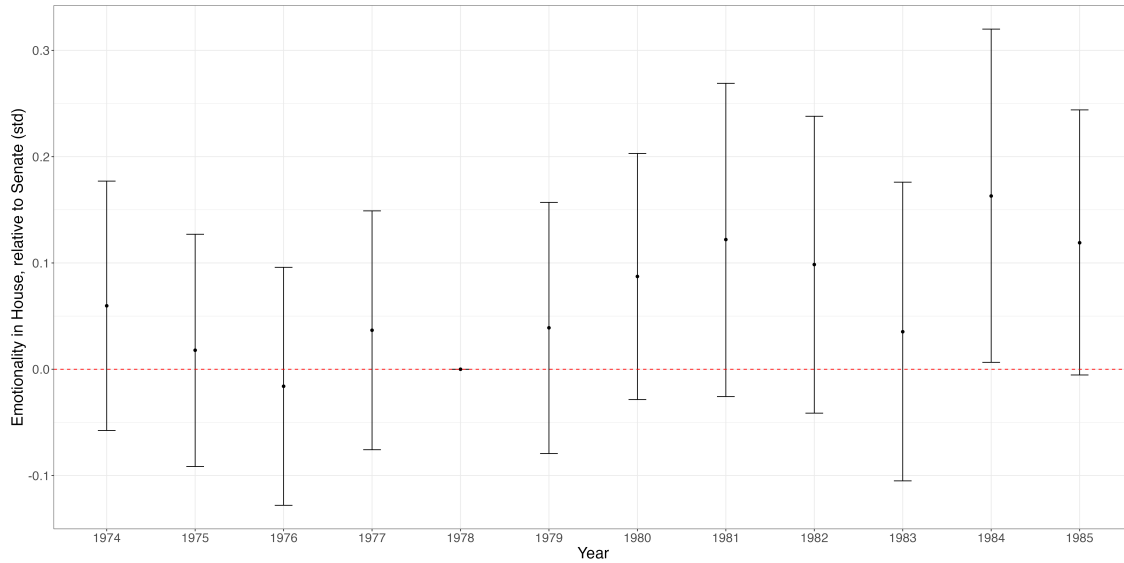
³We only include people whose tenure start in the year after the election, i.e. those who have been elected in the general congressional election. We exclude cases of special elections.

Figure A1: EMOTIONALITY AND C-SPAN1 INTRODUCTION: SELECTION EFFECT



Difference -in-Differences estimates of the effect of C-SPAN on Emotionality (equation 6). The horizontal axis indicates Congresses around the first introduction of C-SPAN1 in the House of Representatives (during the 96th Congress); the vertical axis reports the difference in emotionality between the House and the Senate. Vertical lines give 95% confidence intervals.

Figure A2: EMOTIONALITY AND C-SPAN1 – FOR POLITICIANS ELECTED BEFORE 1980



Difference -in-Differences estimates of the effect of C-SPAN on Emotionality (equation ??). The sample includes all Republican and Democrats elected for the first time 1970, 1972, 1974, 1976, 1978. The horizontal axis indicates Years around the first introduction of C-SPAN1 in the House of Representatives (1979); the vertical axis reports the difference in emotionality between the House and the Senate. Vertical lines are 95% confidence intervals.

B Robustness on the IV

B.1 First stage

Table A1: FIRST STAGE EFFECT OF C-SPAN1 CHANNEL POSITION ON VIEWERSHIP

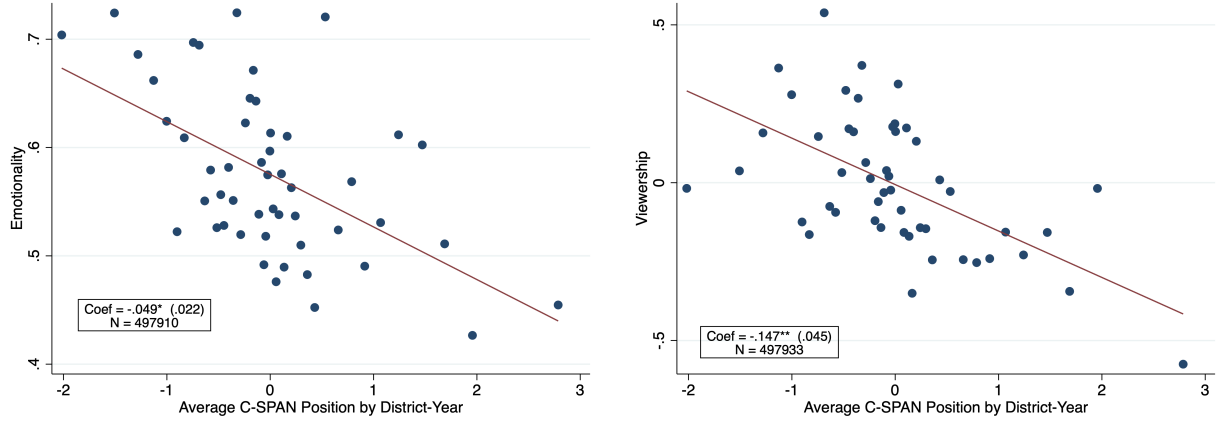
Visibility	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Position	-0.146*** [0.046]	-0.126*** [0.041]	-0.141*** [0.038]	-0.153*** [0.038]	-0.152*** [0.038]	-0.153*** [0.038]	-0.153*** [0.038]	-0.143*** [0.047]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Urban		✓	✓	✓	✓	✓	✓	✓
Income-Educ			✓	✓	✓	✓	✓	✓
Individual				✓	✓	✓	✓	✓
Speech					✓	✓	✓	✓
Topics						✓	✓	✓
Interacted							✓	
Lasso								✓
Mean DV	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Observations	497933	497933	497933	497933	497933	497933	497933	497933

Notes. Each column shows the first stage that correspond to the 2-stage-least-squares specifications in Table 2. The endogenous variable, i.e. Viewership, is regressed on the instrument, i.e. C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014. All columns include State-year fixed effects. *Urban* indicates the inclusion of controls for population (log), density (log), the share of urban population, of Hispanic, Asian, black and white population, of women, and of working age population. *Income-Educ* includes the share of college educated, high-school dropouts, food stamp recipients, and median household income (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. *Speech* indicates controls for speech length (log), word length (log), sentence length (log). *Topics* indicates topic fixed effects. *Interacted* indicates that *Urban* and *Income-Educ* controls are interacted with time trends. *Lasso* indicates the inclusion of controls selected with the post-double selection procedure, i.e. speech length (log), word length (log), speaker's gender, party and age. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

B.2 Main results with i.h.s. Transformation

In this section, we replicate the same results after applying inverse hyperbolic sine transformation to the C-SPAN Channel Position and C-SPAN Viewership variables.

Figure A3: REDUCED FORM AND FIRST STAGE EFFECT WITH I.H.S. TRANSFORMATION



On the left: binned scatter plot of emotionality and channel position. The horizontal axis is the average C-SPAN1 channel position in the speaker's district-year (standardized, after inverse hyperbolic sine transformation); the vertical axis is the average emotionality score by bin (standardized). On the right: binned scatter plot of C-SPAN1 viewership and C-SPAN1 channel position. The horizontal axis reports the average C-SPAN1 channel position in the speaker's district-year (standardized, after inverse hyperbolic sine transformation); the vertical axis reports the average viewership in the speaker's district (standardized). State-year fixed effects absorbed.

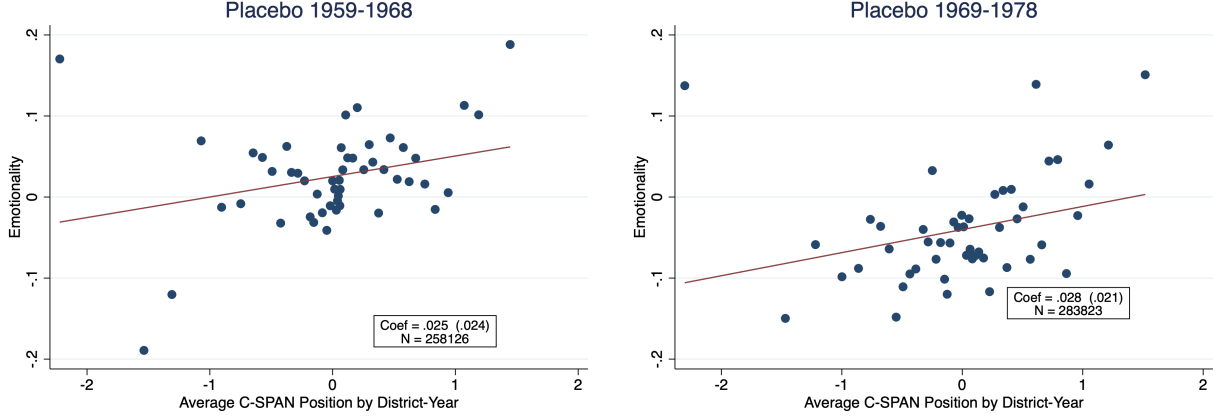
Table A2: REDUCED FORM: EMOTIONALITY AND C-SPAN1 POSITION (I.H.S.)

Emotionality	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Position	-0.052** [0.022]	-0.050** [0.021]	-0.057*** [0.021]	-0.047** [0.019]	-0.043*** [0.015]	-0.028*** [0.010]	-0.028*** [0.010]	-0.025** [0.010]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Urban		✓	✓	✓	✓	✓	✓	✓
Income-Educ			✓	✓	✓	✓	✓	✓
Individual				✓	✓	✓	✓	✓
Speech					✓	✓	✓	✓
Topics						✓	✓	✓
Interacted							✓	
Lasso								✓
Mean DV	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Observations	497910	497910	497910	497910	497910	497910	497910	497910

Notes. Each column shows the OLS regression of the standardized emotionality score in a given speech on the average C-SPAN1 channel position in the speaker's district (i.h.s.). The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives between 1998 and 2014. All columns include State-year fixed effects. *Urban* indicates the inclusion of controls for population (log), density (log), the share of urban population, of Hispanic, Asian, black and white population, of women, and of working age population. *Income-Educ* includes the share of college educated, high-school dropouts, food stamp recipients, and median household income (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native), and controls for age and age squared. *Speech* indicates controls for speech length (log), word length (log), and sentence length (log). *Topics* indicates topic fixed effects. *Interacted* indicates that *Urban* and *Income-Educ* controls are interacted with time trends. *Lasso* indicates the inclusion of controls selected with the post-double selection procedure: speech length (log), word length (log), speaker's gender, party, and age. Standard errors are clustered at the politician level. **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

B.3 Pre-CSPAN Placebo for IV Analysis

Figure A4: PLACEBO: REDUCED FORM EFFECT ON PRE-CSPAN EMOTIONALITY



Binned scatter plot of emotionality in two decades before the introduction of C-SPAN1 (1959-1968 and 1969-1978), and C-SPAN1 channel position. The horizontal axis reports the average C-SPAN1 channel position in the speaker's district-year; the vertical axis reports the average emotionality score by bin.

Table A3: PLACEBO: REDUCED-FORM EFFECT ON PRE-CSPAN EMOTIONALITY

	1959-1968				1969-1978			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Position	0.025 [0.024]	0.013 [0.012]	0.016 [0.013]	0.015 [0.010]	0.028 [0.021]	0.019 [0.013]	0.019 [0.013]	0.015 [0.012]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Topics		✓	✓	✓		✓	✓	✓
Speech			✓	✓			✓	✓
Individual				✓				✓
Observations	258126	258126	258126	258126	283823	283823	283823	283823
R-squared	0.02	0.40	0.42	0.42	0.03	0.35	0.38	0.38

Notes. Each column shows the OLS regression of the standardized emotionality score in a given speech on the average C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1959-1968 and 1969-1978. All columns include State-year fixed effects. Columns 2-4 and 6-8 also include topic fixed effects. *Speech* indicates the inclusion of controls for speech length (log), word length (log), sentence length (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

B.4 CSPAN2 IV Placebo

Table A4: EMOTIONALITY AND C-SPAN2 POSITION: PLACEBO

Emotionality	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C-SPAN2 Position	-0.028 [0.022]	-0.025 [0.020]	-0.026 [0.020]	-0.016 [0.019]	-0.014 [0.015]	-0.003 [0.010]	-0.003 [0.010]	-0.009 [0.010]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Urban		✓	✓	✓	✓	✓	✓	✓
Income-Educ			✓	✓	✓	✓	✓	✓
Individual				✓	✓	✓	✓	✓
Speech					✓	✓	✓	✓
Topics						✓	✓	✓
Interacted							✓	
Lasso								✓
Mean DV	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Observations	497910	497910	497910	497910	497910	497910	497910	497910
R-squared	0.04	0.05	0.06	0.07	0.21	0.51	0.51	0.50

Notes. Each column shows placebo specifications, i.e. the OLS regression of the standardized emotionality score in a given speech on the average C-SPAN2 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014. All columns include State-year fixed effects. *Urban* indicates the inclusion of controls for population (log), density (log), the share of urban population, of Hispanic, Asian, black and white population, of women, and of working age population. *Income-Educ* includes the share of college educated, high-school dropouts, food stamp recipients, and median household income (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. *Speech* indicates controls for speech length (log), word length (log), sentence length (log). *Topics* indicates topic fixed effects. *Interacted* indicates that *Urban* and *Income-Educ* controls are interacted with time trends. *Lasso* indicates the inclusion of controls selected with the post-double selection procedure, i.e. speech length (log), word length (log), speaker's gender, party and age. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

B.5 Instrument Balance

Table A5: INSTRUMENT BALANCE: DISTRICT LEVEL

	Beta	SE	P-val
District characteristics			
Population (log)	.0023174	.0039791	.5636432
Population Density (log)	-.0412946	.0175262	.0235847
Urban Population (%)	.0163487	.0060866	.0105671
High-school dropouts (%)	.0029727	.0015733	.0662852
College educated (%)	-.0025891	.0017008	.1360005
Hispanic (%)	-.0013745	.0028178	.6284187
Black (%)	.0029052	.0016949	.0944507
Asian (%)	.0015466	.0013693	.2655983
White (%)	.0031286	.001968	.119968
Female (%)	.0002497	.000304	.4164899
Working Age (%)	.0006442	.0007216	.3774519
Median household income (log)	-.000427	.0026643	.8734978
Median individual income (log)	.0124381	.0073441	.0983129
Use of Food Stamps (%)	-.0028099	.0011765	.0218659
Members of Congress			
Female (avg)	-.0010767	.0176275	.9516075
Catholic (avg)	-.0213454	.0195973	.2827504
Jewish (avg)	-.024581	.0119651	.0466825
Republican (avg)	.0108889	.0184832	.5591754
Black (avg)	.0143469	.0144245	.3260513
Hispanic (avg)	-.0037714	.0114603	.7438538
Asian (avg)	-.0059457	.0076853	.4438069
Native (avg)	.0005841	.0006427	.3690323
Age (avg)	.1703656	.3810444	.6572749

Notes. Each column shows the OLS regression of the standardized emotionality score in a given speech on the average C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1959-1968 and 1969-1978. All columns include State-year fixed effects. Columns 2-4 and 6-8 also include topic fixed effects. *Speech* indicates the inclusion of controls for speech length (log), word length (log), sentence length (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

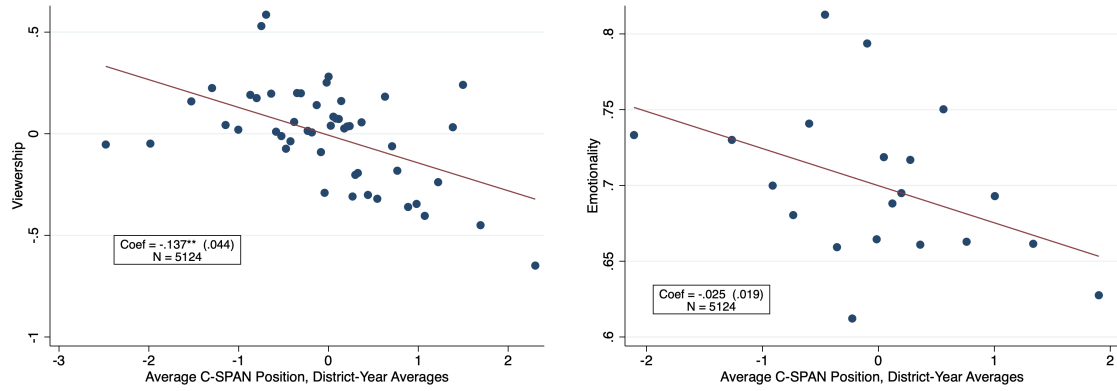
B.6 District-level Specification

Table A6: EMOTIONALITY AND C-SPAN1: DISTRICT LEVEL

	Reduced Form				2sls			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Position	-0.025 [0.019]	-0.018 [0.017]	-0.019 [0.017]	-0.047** [0.021]				
Viewership					0.374* [0.193]	0.269** [0.129]	0.291** [0.133]	0.306** [0.134]
State	✓	✓	✓	✓	✓	✓	✓	✓
Year	✓	✓	✓	✓	✓	✓	✓	✓
Individual		✓	✓	✓		✓	✓	✓
Urban			✓	✓			✓	✓
Income-Educ				✓				✓
KP F-stat					7.639	10.464	10.644	11.480
Observations	5124	5124	5124	497912	497912	497912	497912	497912
R-squared	0.09	0.16	0.16	0.06	-0.08	-0.00	-0.01	-0.00

Notes. Each column shows the OLS regression of the standardized emotionality score in a given speech on the average C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1959-1968 and 1969-1978 . All columns include State-year fixed effects. Columns 2-4 and 6-8 also include topic fixed effects. *Speech* indicates the inclusion of controls for speech length (log), word length (log), sentence length (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Figure A5: REDUCED FORM: EMOTIONALITY AND C-SPAN1 CHANNEL POSITION,
DISTRICT-LEVEL SPECIFICATION

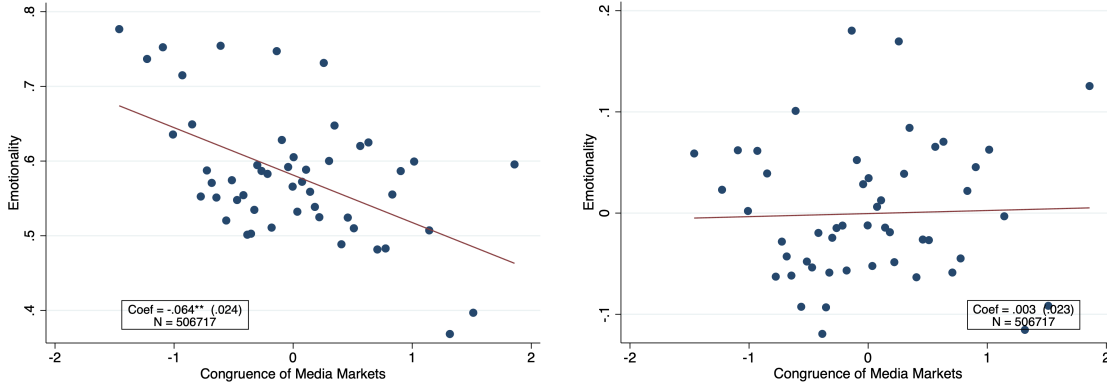


Binned scatter plot of viewership on C-SPAN1 channel position, on the right (first stage), and emotionality on C-SPAN1 channel position, on the left (reduced form). The horizontal axis reports the average C-SPAN1 channel position in the speaker's district-year.

C Emotionality and Media-Market Congruence

Figure A6 reports the regression of emotionality on congruence. The plot on the left-hand side includes state-year fixed effects. The plot on the right-hand side adds district-level controls for population composition and urbanization.

Figure A6: EMOTIONALITY AND CONGRUENCE



Binned scatter plot of Emotionality on Congruence. The horizontal axis reports Congruence between the media market and the electoral district in the speaker's district-year (standardized); the vertical axis reports the average emotionality score by bin (standardized). The left panel includes State-Year fixed effects. The right panel also includes district-level controls.

Table A7: EMOTIONALITY AND CONGRUENCE

Emotionality	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Congruence	-0.064*** [0.024]	0.000 [0.031]	0.011 [0.032]	0.028 [0.030]	0.022 [0.023]	0.018 [0.015]	0.007 [0.011]	0.000 [0.011]
State-Year	✓	✓	✓	✓	✓	✓	✓	✓
Urban		✓	✓	✓	✓	✓	✓	✓
Income-Educ			✓	✓	✓	✓	✓	✓
Individual				✓	✓	✓	✓	✓
Speech					✓	✓	✓	✓
Topics						✓	✓	✓
Interacted							✓	
Lasso								✓
Mean DV	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Observations	506717	506717	506717	506717	506717	485145	485145	485145

Notes. Each column shows the OLS regression of the standardized emotionality score in a given speech on the average Congruence in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014. All columns include State-year fixed effects. *Urban* indicates the inclusion of controls for population (log), density (log), the share of urban population, of Hispanic, Asian, black and white population, of women, and of working age population. *Income-Educ* includes the share of college educated, high-school dropouts, food stamp recipients, and median household income (log). *Individual* includes dummy variables for speaker's gender, religion (Catholic, Jewish), party, race (Black, Hispanic, Asian, Native) and control for age and age squared. *Speech* indicates controls for speech length (log), word length (log), sentence length (log). *Topics* indicates topic fixed effects. *Interacted* indicates that *Urban* and *Income-Educ* controls are interacted with time trends. *Lasso* indicates the inclusion of controls selected with the post-double selection procedure, i.e. speech length (log), word length (log), speaker's gender, party and age. Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

D Other Outcomes

Table A8: C-SPAN1 AND OTHER SPEECH CHARACTERISTICS

	(1) Sentiment	(2) Speech Length	(3) Word Length	(4) Sentence Length	(5) Number of Speeches
Position	-0.006 [0.012]	-0.016 [0.016]	-0.013 [0.010]	-0.032** [0.015]	-0.061** [0.031]
State-Year	✓	✓	✓	✓	✓
Urban	✓	✓	✓	✓	✓
Income-Educ	✓	✓	✓	✓	✓
Observations	497933	497933	497933	497933	497933
R-squared	0.03	0.04	0.02	0.03	0.36

Notes. Each column shows the OLS regression of the speech characteristic on the average C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014. All columns include State-year fixed effects, Urban controls and Income-Educ Controls (as in Table 1). Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table A9: C-SPAN1 AND TOPICS

	(1) Economic Policy	(2) Fiscal Policy	(3) Foreign Policy	(4) Gover nance	(5) Immi graiton	(6) Monetary Policy	(7) National Narrative	(8) Party Politics	(9) Social Issues	(10) Tribute
Topic Probability										
Position	0.003 [0.003]	0.003 [0.003]	-0.001 [0.003]	0.001 [0.001]	0.001 [0.001]	0.000 [0.000]	-0.006*** [0.002]	-0.004*** [0.001]	-0.000 [0.004]	0.009** [0.005]
Mean DV	0.11	0.06	0.09	0.04	0.01	0.00	0.07	0.04	0.16	0.12
Observations	476553	476553	476553	476553	476553	476553	476553	476553	476553	476553
R-squared	0.02	0.02	0.03	0.02	0.02	0.00	0.02	0.01	0.02	0.03
Emotionality										
Position	-0.078*** [0.021]	-0.006 [0.029]	-0.076*** [0.025]	-0.034 [0.023]	0.009 [0.035]	-0.090** [0.046]	-0.008 [0.016]	-0.067*** [0.021]	-0.042** [0.021]	-0.082*** [0.018]
Mean DV	0.70	0.83	1.02	0.50	0.87	0.67	1.93	0.84	0.91	0.02
Observations	50158	29852	42484	18098	4310	1741	31013	18529	77857	55746
R-squared	0.11	0.16	0.12	0.13	0.32	0.39	0.10	0.12	0.08	0.08

Notes. In the panel Topic Probability, each column shows the OLS regression of the speech topic on the average C-SPAN1 channel position in the speaker's district. In the panel Emotionality, each column shows the OLS regression of emotionality on the average C-SPAN1 channel position in the speaker's district, for speeches that belong to the same topic. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014. All columns include State-year fixed effects, Urban controls and Income-Educ Controls (as in Table 1). Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table A10: C-SPAN1 AND POLITICAL SELECTION: IDEOLOGY

	(1) Democrat	(2) DW Nom 1	(3) Extremism	(4) Tenure Start Year	(5) Age	(6) Education
Position	-0.045* [0.024]	0.109** [0.049]	0.010 [0.006]	-0.276 [0.574]	0.006 [0.498]	-0.064** [0.027]
Observations	497933	495611	495611	497933	497933	461398
R-squared	0.48	0.56	0.40	0.43	0.29	0.26

Notes. Each column shows the OLS regression of the speaker's ideology and other characteristics on the average C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014 . All columns include State-year fixed effects, Urban controls and Income-Educ Controls (as in Table 1). Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table A11: C-SPAN1 AND POLITICAL SELECTION: DEMOGRAPHICS

	(1) Female	(2) Black	(3) Asian	(4) Hispanic	(5) Native	(6) White	(7) Catholic	(8) Jewish
ivvar	-0.024 [0.018]	0.009 [0.014]	-0.003 [0.005]	-0.005 [0.005]	0.000* [0.000]	-0.002 [0.015]	-0.039 [0.025]	-0.016 [0.015]
Observations	497933	497933	497933	497933	497933	497933	497933	497933
R-squared	0.30	0.57	0.10	0.36	0.73	0.52	0.34	0.19

Notes. Each column shows the OLS regression of the speaker's demographic characteristic on the average C-SPAN1 channel position in the speaker's district. The sample is composed of all speeches pronounced by Democrat and Republican Members of the House of Representatives, between 1998 and 2014 . All columns include State-year fixed effects, Urban controls and Income-Educ Controls (as in Table 1). Standard errors are clustered at the politician level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

E Summary Statistics

Table A12: SUMMARY STATISTICS: IV VARIABLES

	Count	Mean	SD	Min	Max
Main Variables					
Standardized values of score	497910	0.575	1.141	-2.799	4.574
C-SPAN1 Share 2004	497910	0.086	0.061	0.000	0.525
C-SPAN1 Share 1998-2004	497910	33.509	10.281	6.073	76.937
Speech Variables					
Speech Length	497910	96.004	170.343	1	10289
Avg Word Length	497910	5.666	0.705	2.000	15.000
Avg Sentence Length	497910	16.581	8.136	1.000	277.500
Individual Variables					
Female	497910	0.125	0.330	0	1
Catholic	497910	0.294	0.456	0	1
Jewish	497910	0.069	0.254	0	1
Republican	497910	0.510	0.500	0	1
Black	497910	0.107	0.309	0	1
Hispanic	497910	0.025	0.155	0	1
Asian	497910	0.008	0.092	0	1
Native	497910	0.002	0.042	0	1
Age	497910	57.801	10.062	27	91
District Variables					
Population	497910	638668.553	87402.803	395349	1030361
Population Density	497910	1443.789	3013.071	19.156	33783.345
% Urban	497910	0.712	0.288	0.000	1.000
% Hispanic	497910	0.149	0.145	0.008	0.822
% Black	497910	0.141	0.158	0.004	0.838
% Asian	497910	0.045	0.051	0.003	0.412
% White	497910	0.716	0.178	0.099	0.970
% Female	497910	0.509	0.009	0.484	0.553
% Working Age Population	497910	0.641	0.025	0.574	0.769
% High-School Dropouts	497910	0.147	0.061	0.036	0.500
% College Graduates	497910	0.281	0.101	0.071	0.656
Median Households Income	497910	56563.065	15533.456	25655.431	113044.365
(mean) med value	497910	235083.189	145072.067	68893.325	869927.488
% Households on Food Stamps	497910	0.114	0.054	0.021	0.448

Notes. Main summary statistics for all variables included in the IV analysis.