

Temporal Selective Exposure: How Partisans Choose When to Follow Politics

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Abstract

Despite widespread conjecture that partisan selective exposure drives mass polarization, there is little evidence that most Americans have skewed media consumption patterns. We suggest an alternative conceptualization of selective exposure: partisans select *when* to pay attention to politics, instead of *which* ideological sources to follow, such that they modify their political attentiveness in response to whether the flow of information is congenial to their party. We employ two empirical strategies to test our hypothesis. First, we compare the in- and out-partisans' differential levels of political engagement by party performance over the last six decades. Second, we use a natural experiment leveraging a dramatic change in the information environment during the 2008 financial crisis. Both approaches show that, over time, partisan groups' changes in political attentiveness are affected by the performance of the incumbent government, suggesting that partisans' *information* diets may be imbalanced even if their *media* diets are well-balanced.

Key Words

Selective Exposure; Polarization; Political Interest; Partisan Identity; Natural Experiment

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Temporal Selective Exposure: How Partisans Choose When to Follow Politics

Polarization is a defining feature of contemporary American politics (see Prior 2013 for a reviews). Evidence about polarized perceptions—even on purely factual matters—abounds (Abramowitz 2010; Bartels 2002; c.f. Bullock et al. 2015). Many observers have linked this phenomenon to partisan selective exposure, the idea that citizens purposefully choose media outlets that match their existing political predispositions (e.g., Levendusky 2013; Stroud 2008).¹ Concerns about “echo chambers” fueling mass polarization have grown in the wake of rapid changes in the media (Stroud 2010; Sunstein 2018; Van Aelst et al. 2017). The echo chamber argument is also one of the most recurrent themes in the popular discourse about the current status of democratic politics.

Yet, empirical evidence on partisan selective exposure is surprisingly tenuous outside controlled experimental settings (see Garrett 2009; Gentzkow and Shapiro 2011; Prior 2013; Webster and Ksiazek 2012). Indeed, studies using *behavioral* measures of media consumption have consistently shown that most Americans, except for a handful of extreme partisans, do not have skewed media diets (Guess 2016; Petersen, Goel, and Iyengar 2018). Though there are strong theoretical reasons to believe that a high-choice media environment contributes to polarization, the lack of evidence for widespread partisan selective exposure raises an important question: why do partisans have polarized perceptions even when they have relatively balanced media diets?

In this paper, we suggest that an alternative conceptualization of selective exposure can provide part of the answer. Though selective exposure is typically conceptualized as an *outlet-*

¹ The other prominent explanation is partisan motivated reasoning, in which partisan identification biases the way people interpret political information (e.g., Bartels 2002).

based phenomenon in which citizens choose *what* to consume, we argue that it can also be a *temporal* behavior in which citizens choose *when* to consume political information. Just as sports fans “flee with their eyeballs” when their team’s performance is too depressing to watch (Fernandez, 2015), we hypothesize that people pay less attention to politics when their own partisan team is losing and pay more attention when their team is winning. If people want to avoid cognitive dissonance and maximize the entertainment value of politics, deciding when (and when not) to consume news may well be a simpler strategy than intentionally picking media sources that match their political predispositions. While choosing what news to consume and when to tune it out can both lead to biased information flows, much of existing research on selective exposure has focused on the former, while paying scant attention to the latter. Our aim is to fill this important gap in the literature.

To empirically test our hypothesis, we develop two empirical strategies (see Appendix A for a formal definition of temporal selective exposure and Bayesian simulations that demonstrate how temporal selective exposure can lead to belief polarization). First, we use American National Election Studies (ANES) data to compare partisan groups’ levels of media consumption and political engagement across 28 election cycles. Second, we use a natural experiment that utilizes an exogenous change in the news environment caused by the financial crisis in 2008, drawing on the rolling cross-section component of the National Annenberg Election Survey (NAES). Both approaches show that partisan groups choose when to follow politics more or less actively in a manner consistent with our argument.

This article makes an important theoretical contribution to the ongoing debate about the extent of partisan selective exposure by suggesting that partisans can temporally increase or decrease their political attentiveness to maximize pleasant information flows and minimize

unpleasant ones. As such, we argue that well-balanced *media* diets do not guarantee well-balanced *information* diets, without the additional assumption that political attentiveness is independent of party performance. Our empirical results indicate that this assumption is invalid. As a result, by focusing only on media choices, scholars may have underestimated the actual extent to which partisans expose themselves to congenial information. Importantly, our research describes a condition under which beliefs can be polarized even if people's media diets are well balanced and they interpret new information without partisan biases.

Mixed Evidence on Partisan Selective Exposure

Consumers of information are predisposed to maximize its expected utility, so they are motivated to seek attitude-congruent information and avoid attitude-incongruent information that creates mental discomfort (Festinger 1957). This simple yet powerful theory has yielded the prediction that partisans prefer exposure to information that conforms to their existing political dispositions. Our field now has collected extensive empirical evidence in lab- and survey-based studies displaying the existence of partisan selective exposure (e.g., Iyengar and Hahn 2009; Knobloch-Westerwick 2012; Levendusky 2013; Metzger, Hartsell and Flanagin 2015; Stroud 2010; Winter, Metzger and Flanagin 2016), a pattern that dates back to the earliest studies of campaign effects (Lazarsfeld, Berelson, and Gaudet 1948).

However, behavioral evidence measuring the *extent* of partisan selective exposure raises doubts about the notion that most Americans are exposing themselves to like-minded partisan media. One study of millions of website visits (Gentzkow and Shapiro 2011) finds that most of the largest news websites attract a similar amount of traffic from citizens across the partisan

aisle.² Thirty percent of daily visitors to the New York Times website are conservatives, for example, and one quarter of daily visitors to the Fox News website are Independents and Democrats. Real-world data collected in different times, settings, and platforms all reinforce the same finding that most Americans have mixed media diets (e.g., Bakshy, Messing, and Adamic 2015; Flaxman, Goel, and Rao 2016). Even during an election as polarizing as the one in 2016, most partisans were exposing themselves to mainstream media sites (Petersen, Goel, and Iyengar 2018).

The behavioral data that report limited evidence of partisan selective exposure also show an overwhelming amount of non-political media consumption. One study finds that, over three months in a non-election year, 96% of Internet users read fewer than one news article per week (Flaxman, Goel, and Rao 2016). Other web traffic data paint a similar picture; less than 4% of all web visits are to news articles (Petersen et al. 2018). In another study that finds evidence of substantial exposure to cross-cutting partisan news among 10 million Facebook users (Bakshy et al. 2015), the authors briefly report that 87% of all articles shared comprise non-political content such as entertainment, sports, and travel.

By focusing on partisan media sources, past studies on selective exposure implicitly painted a portrait of the electorate treated with a full plate of political media choices. However, these striking statistics on non-political media consumption—which are actually in synchrony with long-standing evidence on a general lack of political interest and knowledge (Delli Carpini and Keeter 1996)—hint at one obvious but overlooked way in which partisans might minimize cognitive dissonance: choosing not to pay attention to politics when their party is losing.

² The discrepancy may arise from the fact that the real world contains many more distractions than controlled settings. See also Guess (2016) on the explanation for this gap.

The Temporal Dynamics of Selective Exposure

How does belief polarization persist when the real-world evidence on partisan selective exposure is so scarce? We suggest that the temporal dynamics of selective exposure can speak to this important puzzle. People may temporally adjust their political interest level upwards or downwards in response to the flows of good/bad news about their party. This approach allows them to maximize exposure to pleasing information and minimize exposure to displeasing information without having to seek partisan sources. Therefore, the evidence that Americans have mostly centrist or mixed political media diets does not guarantee that partisans' perceptions would not be polarized without assuming that the levels of political engagement across partisan groups move in tandem with, or at least is independent from, the performance of the incumbent party. The assumption that partisans' media consumption is independent of party performance seems very implausible because it implies that either: (1) partisans would find politics equally enjoyable when their side underperforms or (2) partisans would remain equally attentive to politics when following politics becomes less enjoyable.

What do humans generally do when the team they are rooting for underperforms? In the world of sports, fans simply stop watching games (e.g., see Fernandez, 2015). We argue the same phenomenon occurs in politics. In fact, scholars often draw a parallel between partisans and sports fans because they both derive expressive benefits from cheering for their teams (e.g., Green, Schickler, and Palmquist 2002; Mason 2015). The psychological underpinnings of media consumption also remain similar across the two worlds. People actively choose and watch media that can maximize their sense of gratification, whether it is to arouse positive emotions or release tension and stress (Atkin 1973; Ruggiero 2000). To the extent that most people do not enjoy learning about how their team is under-performing, consuming political news when their party is,

or is expected to be, losing is less gratifying, which may cause some to tune out of politics altogether.

Further, the ebbs and flows of citizens' political interests depending on party performance have long been intimated in many academic studies. In emphasizing the role of information environments in partisan learning, Jerit and Barabas (2012, p. 674) note that individuals can "scrutinize, counterargue, and *reject*" the flows of uncongenial information (emphasis added), which results in partisans' higher level of political knowledge in issues that had positive implications for their party. Gelman et al. (2016) documented that partisans' willingness to respond to public opinion polls varies by their party's performance. Notably, Democrats answered polls at a much lower rate when Obama performed poorly in the first presidential debate against Romney, but more opted to participate when he "recovered" in later debates. The common strand that runs across the studies on the dynamics of partisan engagement and learning is that citizens are more engaged when their partisan team is performing well. From what we know about the link between political interest and news consumption, it is natural to assume that partisans consume more or less news depending on whether their party is perceived to be winning.

It is more plausible and much simpler for partisans to avoid cognitive dissonance by deciding when to consume news than purposefully picking media sources that match their existing political dispositions. We empirically test the temporal selective exposure hypothesis focusing on presidential performance, the most easily accessible and salient partisan heuristic for whether things are going well for one's own party.

Study 1: Temporal Selective Exposure from 1952 to 2016

Do partisans tune in and out of politics depending on their party's performance?

According to our argument, we should find that partisans' interest in politics fluctuates in a *non-parallel* way over time, in response to the successes and failures of the incumbent party. In Study 1, we examine partisan differences in political attentiveness across 28 election cycles. Given that the overall valence of news flows would be less friendly to the incumbent party (i.e., uncongenial to in-partisans and congenial to out-partisans) when the sitting president performs poorly, we examine how partisan groups' political attentiveness changes over a range of presidential performances.

Data and Methods

We draw on the on the Time Series Cumulative Data of the ANES, which pools 31 representative cross-section surveys of the American electorate since the 1948 election.³ We use 28 surveys collected between 1952 and 2016 that include both party identification and at least one of the variables that taps into political engagement, broadly defined (N = 59,174).

We use in-partisanship and presidential performance as two key independent variables. We recoded the 7-point party ID into a dummy variable where 0 indicates identification with the non-incumbent party (e.g., Republicans in 2016) and 1 indicates identification with the incumbent party (e.g., Democrats in 2016). Independents leaning toward either party were treated as partisans. Pure independents were excluded. For a proxy to presidential performance, we used presidential approval ratings gathered by the Gallup Poll in September of each election year.⁴

³ Appendix B provides more detailed information about the two datasets and the measurement of the key variable.

⁴ The raw data can be found at <http://www.gallup.com/interactives/185273/presidential-job-approval-center.aspx>.

For the dependent variables, we used four indicators of political interest and three indicators of news media consumption.⁵ The measures of political interest include questions about interest in the elections, public affairs, and the extent to which respondents “care” which party wins presidential and congressional elections. The indicators of news consumption include exposure to campaign information via television, radio, and newspaper. All dependent variables are coded such that higher numbers indicate more active political engagement.

Analysis

To test our hypothesis on temporal selective exposure, we estimate the following regression model:

$$Y_{i,t} = \beta_0 + \beta_1 Perform_t + \beta_2 Inpartisan_{i,t} + \beta_3 Perform_t \times Inpartisan_{i,t} + \varepsilon_{i,t} \quad (\text{Equation 3})$$

where t denotes the survey year; $Y_{i,t}$ is an indicator of political attentiveness; $Perform_t$ is the incumbent president’s Gallup Poll approval rating in year t (ranging from 24% to 76%), rescaled to 0-1; $Inpartisan_{i,t}$ is a dummy indicating whether respondent i ’s identified with the incumbent president’s party in year t . β_1 is the predicted difference in political attentiveness over a range of presidential performance for out-partisans; $\beta_1 + \beta_3$ is the predicted difference in political attentiveness over presidential performance for in-partisans; β_3 captures how the relationship between political attentiveness and presidential performance differs between in-partisans and out-partisans—i.e., $\beta_1 + \beta_3 - \beta_1 = \beta_3$.

One may think of our research design as a quasi-experiment where respondents were “assigned” to different levels of presidential performance—and thus to different valences of

⁵ We did not create an index of the seven indicators of political attentiveness because only five surveys measured all of the items.

news coverage of the incumbent party. If partisans do *not* modify their political engagement in response to the incumbent party's performance, we should find this "treatment" affects political attentiveness in the same way regardless of whether one identifies with the incumbent party—i.e., $\beta_3 = 0$. If people enjoy political news when their party performs better and adjusts their political attentiveness accordingly, we should find that the effects of the "treatment" are heterogeneous across partisanship. More specifically, in-partisans should become more politically attentive *relative to out-partisans* when the incumbent president is popular than when he performs poorly—i.e., $\beta_3 > 0$.

It is worth noting that we did not have *a priori* expectations about the "main effect" of presidential performance. One can imagine a scenario where it is generally negative (or positive) regardless of whether our hypothesis is true. For example, it is possible that people generally become more politically engaged under an incompetent president who creates national crises that require urgent actions. It is also possible that they become more engaged under a competent president out of general excitement. But to the extent that either of these patterns exists, the null hypothesis predicts that partisans' engagement levels would move in tandem, whereas our hypothesis predicts that they would diverge. According to our argument, we should find that the *difference* in political attentiveness across presidential performance *differs* by partisanship. Therefore, the key quantity of interest throughout the results reported below is the estimate of β_3 —the *difference-in-differences* estimate of people switching their political attentiveness on and off.

Results

[Table 1 here]

Table 1 report the regression estimates. In Column 1, we focus on election interests. The reported estimate of β_3 indicates a 13-percentage point gap ($p < 0.05$) in the effect of presidential popularity across partisanship. This is a substantial change. To put the number in context, consider that college graduates and non-college graduates differ by 17 percentage points in terms of interest in the upcoming election. The three regression models using other indicators of political interest (Columns 2 to 4) also show that in-partisans become more politically attentive than out-partisans under a well-performing president—as indicated by the signs on the β_3 coefficient—although the estimates on caring about the congressional race and interest in public affairs in general were not statistically significant. None of the analyses focusing on the news exposure variables returned a significant estimate of β_3 .

Overall, the null hypothesis that partisans' changes in political attentiveness over time is parallel across presidencies is generally inconsistent in our analysis of the ANES data, although the evidence was not clear whether the pattern held for people's news consumption behaviors as well. The obvious advantage of the ANES data is that it allows us to examine the patterns of temporal selective exposure spanning six decades. However, there are two important caveats. One is the well-documented limitations in the ANES news exposure measures (see Bartels 1993; Dilliplane, Goldman, and Mutz 2012; Prior 2009), which make it difficult to reliably estimate how people modify their news consumption behaviors. The unreliability of the self-reported measures may have contributed to null findings (in Columns 5 to 7). While we do find more pronounced support for our hypothesis focusing on the measures of political interest, such findings serve only as suggestive evidence for whether partisans actually adjust their overall exposure to news media depending on whether their team is “winning.”

A more serious concern is that two election cycles that vary over the popularity of the sitting presidents also may be different along other dimensions. Most obviously, they are at least two years apart—and unspecified time effects can be substantial. In this regard, presidential popularity is a “bundled treatment” where multiple factors vary simultaneously. Critically, we cannot hold all the possible differences constant because we have only 28 comparison points. Therefore, while Study 1 allows us to *describe* partisan divergence in news exposure across the popularity of the incumbent president, it does not allow us to fully explain why the divergence exists—whether it is presidential performance *per se* or an extraneous time effect that drives the observed pattern remains unclear.

Study 2: A Natural Experiment Using the 2008 Financial Crisis

To address the shortcomings of Study 1, ideally one would use better measures of news media consumption to compare how partisans’ political attentiveness changed around a sudden shift in information flows regarding the incumbent party’s performance, with most extraneous time effects held fixed. That is exactly our method in Study 2. Specifically, we leverage the dramatic change in political and information environments caused by the 2008 financial crisis, using a nationally representative dataset that provide a multitude of media-use items.

Data and Methods

We use the rolling cross-section component of the 2008 National Annenberg Election Study (NAES) for Study 2. The NAES interviewed a representative sample of U.S. adults selected through random-digit dialing between December 2007 and November 2008 (N = 57,967). We use a subsample of respondents interviewed between September 8 and October 19 (N = 10,268), a time window that runs from one week before the start of the economic meltdown (September 15—the date that Lehman Brothers filed for bankruptcy) to one month afterwards.

For the dependent variable, *News Exposure*, we constructed an additive index of the number of political television programs, radio shows, newspapers, and online websites, which ranges from 0 to 17 (see Appendix C more information about measurement of the key variables in Study 2).⁶ Respondents were first asked how many days in the past week they consumed each of the media for information about the 2008 presidential campaign. And those who indicated watching at least one day in the past week were asked which specific programs/papers/websites they consumed. This approach is similar to the program list technique recommend by Dilliplane, Goldman, and Mutz (2012) as a more reliable and valid measurement of news exposure.

We also utilized other sets of questions on respondents' social media use, and constructed another additive index, *Social Media Use*, that counts the number of online political activities in which they engaged in the previous week. These activities include visiting a campaign website, watching an online campaign video, forwarding online campaign information, discussing politics online, and contributing to political blogs. *Campaign Interest* measured how closely respondents were following the campaign. *Political Attentiveness Index* was constructed by combining the three variables (news exposure, online media use and campaign interest). To do so, we first standardized each variable and took the average (Cronbach's alpha = 0.60) and rescaled the variable 0-1 so that 1 indicates the highest level of attentiveness.

Analysis and Results

⁶ Those without internet access were not asked about online news use, and, therefore were omitted from the analyses on news exposure. This decision does not render our results invalid because internet access is highly unlikely to be affected by the "treatment" (the economic meltdown) though the findings here are generalizable only to U.S. adults with internet access (78% of the full sample had internet access). We chose to drop these individuals instead of coding their internet news use as 0 because doing so would introduce a floor effect. Nonetheless, we found very similar results when their online news use was treated as non-missing zeros.

The key advantage of the NAES data is that it employed the rolling cross-section (RCS) design where a fresh sample is randomly drawn from the population each day. This allows us to capture a representative snapshot of the American electorate just before a critical event—a control group—and a snapshot afterwards—a treatment group. By *treatment*, we mean the dramatic change in the political news cycles caused by the collapse of the economy in mid-September of 2008. Specifically, Lehman Brothers filed for bankruptcy on September 15, setting in motion a chain of events—the crisis of AIG, meltdown of the stock market and subsequent bailout proposals—that continued to generate extremely bad news for the incumbent government controlled by the Republican Party. We test our hypothesis on temporal selective exposure by comparing how Republicans and Democrats changed their media consumption and political interests during that time.

This RCS-based approach has a key advantage that resembles a feature of a randomized experiment; since each respondent is essentially randomly assigned to an interview date, those in the control and treatment groups are expected to be comparable in terms of pre-existing characteristics. We have no good reason, other than chance alone, to suspect that baseline political attentiveness is different between the control and treatment groups (but see Gelman et al. 2016). Furthermore, unlike the cross-election comparisons, extraneous differences in political environment are mostly held constant, making it easier to underpin whether bad news about the incumbent party's performance is the driving force of partisans' adjusting their media consumption.

[Figure 2 here]

We begin with non-parametric graphical evidence. Panels A and B of Figure 2 respectively plot Republicans' and Democrats' news consumption and political interests between

early September and early October. The solid and dotted lines plot kernel-weighted (Epanechnikov; bandwidth = 5 days) local averages with 95% confidence intervals. The circles plot weekly averages comparing those interviewed before Lehman Brothers filed for bankruptcy on September 15 (i.e., the control group), those interviewed when the economy started collapsing (between September 15 and 21), and those interviewed afterward the collapse (i.e., the treatment group). The key question here is whether the two slopes in Panel A and B differ in the expected direction. Specifically, our hypothesis predicts that Republicans (in-partisans) would become less attentive relative to Democrats as the economy starts collapsing and bad news about the incumbent party is being broadcast. We find straightforward evidence for this hypothesis.

As shown in the top panels of Figure 2, Republicans' news consumption decreased between early September and early October, the time during which Democrats' news consumption slightly increased. Republicans showed a more salient drop in the use of social media for political activities, while Democrats' online media use remained unchanged (see the upper-middle panels). Democrats exhibited a more noticeable upward change in campaign interest than Republicans (see the lower-middle panels). Finally, the analyses using the *Political Attentiveness Index* shown in the bottom panels clearly demonstrate that Republicans paid significantly less attention to politics as bad economic news was sweeping the nation, while Democrats' attention levels stayed more or less the same.

To provide more formal estimates of these patterns, we fit the following regression model:

$$Y_i = \beta_0 + \beta_1 Treat_i + \beta_2 Republican_i + \beta_3 Treatment_i \times Republican_i + \varepsilon_i \quad (\text{Equation 4}),$$

where Y_i is the dependent variable (an indicator of media consumption or political attentiveness); $Treatment_i$ is a dummy indicating whether respondent i was interviewed before (0) or after (1)

September 15; $Republican_i$ is a dummy indicating respondent i 's identification with the Republican Party⁷; β_0 is the intercept; β_1 is the change in political attentiveness before and after the financial crisis for Democrats; $\beta_1 + \beta_3$ is the change in political attentiveness before and after the financial crisis for Republicans; β_2 is the difference between Republicans and Democrats in the control group; and β_3 , the coefficient on the interaction term, captures the partisan difference in treatment effects. According to our hypothesis, the flow of bad news for the Republican Party would cause Republicans to become less attentive relative to Democrats ($\beta_1 > \beta_1 + \beta_3$), in which case β_3 should take a negative sign.

To estimate Equation 4, we made the following choices regarding time windows for the control and treatment groups.⁸ First, throughout the analyses below, those interviewed in the final week leading up to the Lehman collapse (between September 8 and September 14) serve as the control group. Its timeline roughly matches the short-lived post-convention period, during which both partisan groups were becoming more attentive.⁹ Second, those interviewed on September 22 or later serve as the treatment group. We excluded those interviewed between September 15 and 21 from the regression analyses below because most of the survey items for the outcome variables measured respondents' behaviors "in the past week;" therefore, their responses could reflect what they did on September 14 or earlier.

⁷ We assumed that the treatment would not have changed people's party ID, given its remarkable stability (Green, Schickler, and Palmquist 2002). We found no significant difference in the proportion of partisans in the sample around the cutoff date.

⁸ While some of the cutoff selections are admittedly arbitrary, the results were generally insensitive alternative specifications.

⁹ The Republican convention ended on September 4. We found similar results when using wider (September 5 to 14) or narrower (September 10 to 14) bandwidths of the control groups. Appendix E details the robustness checks.

Since we did not have clear theoretical expectations for the immediacy and longevity of the treatment effects,¹⁰ we used three different bandwidths for the treatment group—one week (9/22 to 9/28), two weeks (9/22 to 10/5), and four weeks (9/22 to 10/19)—a flexible approach that would convey both short-run and long-run effects. To ensure that employing different bandwidths does not inflate family-wise error rates, we also report Holm’s p-values corrected for three multiple comparisons. Also, to ensure that our estimates are not confounded with unexpected imbalances between the control and treatment groups, we report the results with and without pre-treatment covariates; the controls include turnouts in previous elections, demographics and their interactions with party ID.¹¹

[Table 2 here]

In total, Table 2 reports 24 regression models (4 outcomes \times 3 treatment group bandwidths \times with or without controls). Again, the key quantity of each model is β_3 in Equation 2, which, according to our hypothesis, should be *below zero*. As can be seen, that is precisely what we found. Across different models, all 24 estimates of β_3 are negative. Nineteen out of the 24 estimates are statistically significant at $p < 0.05$, 15 of which survive Holm’s correction for 3 multiple tests for 3 different treatment group bandwidths. Comparing the results from the top panel to the bottom panel, it is noticeable that the estimates are generally insensitive to the choice of treatment group bandwidths. This suggests that the treatment led partisans to adjust

¹⁰ On one hand, partisans may have switched on or off political interest immediately after the Lehman debacle, and then defaulted back to the usual campaign mode in the long run. On the other hand, since the economic turmoil continued throughout the rest of the campaign, the treatment effect may have grown even larger as the financial crisis continued to worsen.

¹¹ We only control for the variables unlikely to be affected by the treatment. For example, one’s turnout in the 2004 election could not have been affected by the economic meltdown. Adding “post-treatment” variables that can be affected by the treatment (e.g., economic perceptions) into the model will make the inference invalid (see Montgomery, Nyhan, and Westwood 2018). Appendix E provides the list of control variables and their coefficients.

their interest in politics fairly early in the wake of the financial crisis, and the effects persisted for an extended period of time. Comparing the pairs of models with and without controls (e.g., Columns 1 vs. 2), we find remarkably consistent results. This is not surprising because survey timing (i.e., assignment to either group) was randomized by the RCS design. Comparing across different indicators of political attentiveness, we find more salient and immediate effects on social media use (Columns 3 and 4), compared to general news exposure (Columns 1 and 2) and campaign interest (Columns 5 and 6).¹²

Finally, in terms of the *Political Attentiveness Index* (Columns 7 and 8), we find that partisan differences in change over time was between 4.6 to 5.4 percentage points in the direction of Republicans becoming less attentive. These are large effects. To put these figures in context, consider that they are close to the difference observed between those with and without a college degree (6.5 percentage points) and amount to roughly 60% to 70% of the difference between those who voted and those who did not vote during the 2008 primaries (7.7 percentage points).

There are two reasonable alternative explanations for our results. First, despite the random selection of interview date by the RCS design, there may have been some systematic differences between the control and treatment groups. One possibility is partisans' differential rates of survey participation (see Gelman et al., 2016). If attentive Republicans, in particular, simply stopped responding to the survey after September 15, our results may have picked up the

¹² We found a similar pattern when we disaggregated the news exposure variable into different channels and ran a separate model for each channel. It is possible that adjusting the amount of news consumption is easier online due to the much wider spectrum of choices the internet provides (Prior 2007). This could be a potential explanation as to why partisan polarization has been *growing* in tandem with the recent changes in the media environment.

change in the composition of Republicans willing to respond to a political survey, instead of the change in their media consumption or political interest.¹³

In Appendix D, we empirically check the potential differences between the control and treatment groups. Placebo tests using turnouts in the past three elections (2004, 2006 and 2008 primaries) found no difference between the two groups, and no significant interaction between treatment and party ID (see Tables D1 and D2). More generally, we found no statistical evidence of partisan difference in other pre-treatment variables; and as demonstrated, controlling for these variables made almost no changes to the estimates.

Another alternative explanation is that Republicans' general interest in politics was already in decline, and our findings simply reflect an ongoing time trend, not a true turning point caused by the news flows at the outset of the Lehman collapse. We found the opposite pattern, however (see Table D3 in Appendix D). Republicans were becoming more engaged throughout the month prior to mid-September, until the economy started collapsing on September 15. Indeed, while partisans' interest in politics may well have changed over time even without the treatment, it is likely that it would have increased due to the increasing intensity of campaign efforts and the narrowing proximity to the impending election. In this regard, the noticeable decline in political media consumption found *only among Republicans* should seem highly unusual and unlikely, if the null hypothesis were correct that partisans do not tune out the news when every bit of new information is unfavorable to one's party.

¹³ We note, though, that reluctance to respond to a political survey in and of itself can be seen as a strong sign of people tuning out of politics.

Conclusion

The evidence of persisting/growing disagreements among partisans abounds. But, one potential explanation for this polarization—partisan selective exposure—has found little to mixed empirical support, leading to the conclusion that “neither the supply nor the demand for biased information is as widespread as is sometimes claimed” (Van Aelst et al. 2017, p.14). This poses an important conundrum: If most Americans are not actively seeking media outlets that match their political predispositions, how does the contemporary media environment account for partisan polarization? Many will find it highly implausible that a high-choice information environment has nothing to do with polarization. The problem, however, is that “the mechanisms by which this might occur are not well understood” (Leeper 2014, p. 28; see also Metzger, Hartsell and Flanagin 2015, 19).¹⁴

The temporal dynamics of selective exposure is an important explanation for this puzzle. To the extent that learning about the underperformance of the incumbent government is a tough pill to swallow for in-partisans (or a piece of candy for out-partisans), switching off the flows of bad news would be a much easier strategy to minimize cognitive dissonance than choosing a news source that fits their existing partisan dispositions. We hypothesized that citizens choose when, instead of which source, to pay attention to depending on how their own party performs. From this perspective, selective exposure can be conceptualized as a divergent fluctuation in political interest and amount of media consumption over time. Using the ANES over half a century, we show how partisans’ level of political interest differs by presidential performance. Our natural experiment using the collapse of Lehman Brothers in 2008 showed that a sudden

¹⁴ One suggested mechanism is a two-step communication flow in which those who watch partisan media affect others who do not watch partisan media (Druckman, Levendusky, and McLain 2018).

increase in bad economic news—which typically does not bode well for the electoral fortune of the incumbent party—affected in- and out-partisans differently. Across the two empirical strategies,¹⁵ we find consistent evidence that partisans pay attention to politics more or less depending on their party's performance.

Our findings indicate that the stream of information that in-partisans receive in the long run may very well be different from what out-partisans are exposed to, which may, in turn, generate polarization of political beliefs, even if most citizens do not rely on partisan sources (see also Davis and Dunaway 2016).¹⁶ Despite many mixed to null findings about partisan selective exposure, we argue that selective exposure may have happened all along as partisans simply switched the news on and off conditional on whether their team was faring well. As such, the previous studies focusing on the imbalance media diets may have failed to fully capture the imbalance in information diets.

Since the early studies in political communication (e.g., Berelson et al. 1954), two forms of selective exposure have remained at the center of scholarly attention: partisan selective exposure—the selection of media in synchrony with one's existing political disposition—and apolitical selective exposure—people using non-political media to avoid politics altogether (Arceneaux and Johnson 2013; Stroud 2008; Prior 2007). What has received surprisingly little attention is how and when the second type of (apolitical) selective exposure affects partisan

¹⁵ The former approach maximizes generalizability across time at the expense of internal validity, while the latter maximizes internal validity holding much of the extraneous factors constant at the expense of generalizability.

¹⁶ We used a simulation approach to show that the temporal dynamics of selective exposure can explain *belief* polarization (e.g., see Bartels 2002), which may or may not entail *affective* polarization (Iyengar et al. 2018). To the extent that consuming good news about one's own party affirms and strengthens party identity, choosing when to tune into news may explain affective polarization. We leave this conjecture, not examined in our paper, to future research.

politics, particularly perceptual gaps across partisans. Students of public opinion are familiar with the fact that most people do little more than skim through the headlines to follow politics (Delli Carpini and Keeter 1996). But the remaining question is: when do citizens go beyond that in this information environment where attention is the most coveted resource? Our study underscores the temporally dynamic nature of selective exposure; it is not necessarily that people stay away from politics all the time but that partisans occasionally pay close attention when the headlines signal that the news they are about to consume will confirm their existing political dispositions. Tuning into politics only when things are going well for their own partisan team carries plausible implications for mass polarization. If politics is about “who gets what, when, and how” (Lasswell 1936), the study of selective exposure needs to be about *when* as much as *what*.

References

- Abramowitz, Alan. 2010. *The disappearing center: Engaged citizens, polarization, and American democracy*. New Haven: Yale University Press.
- Arceneaux, Kevin., Martin Johnson, and Chad Murphy. 2012. "Polarized political communication, oppositional media hostility, and selective exposure." *The Journal of Politics*, 74(1), 174-186.
- Atkin, Charles. 1973. "Instrumental Utilities are Information Seeking." In *New Models for Communication Research*. In *New Models for Communication Research*, edited by Peter Clarke, 204-242. Beverly Hills, CA: Sage.
- Bakshy, Eytan, Solomon Messing, and Lada A. Adamic. 2015. "Exposure to ideologically diverse news and opinion on Facebook." *Science* 348(6239): 1130-1132.
- Bartels, Larry M. 2002. "Beyond the running tally: Partisan bias in political perceptions." *Political Behavior* 24(2): 117-150.
- Berelson, Bernard R., Paul F. Lazarsfeld, William N. McPhee, and William N. McPhee. 1954. *Voting: A Study of Opinion Formation in a Presidential Campaign*. Chicago, IL: Chicago University Press.
- Bullock, John. G. 2009. "Partisan bias and the Bayesian ideal in the study of public opinion." *The Journal of Politics* 71(3): 1109-1124.
- Bullock, John G., Alan S. Gerber, Seth J. Hill, and Gregory A. Huber. 2013. "Partisan bias in factual beliefs about politics." *Quarterly Journal of Political Science* 10: 519-578.
- Davis, Nicholas T., and Johanna L. Dunaway. 2016. "Party polarization, media choice, and mass partisan-ideological sorting." *Public Opinion Quarterly* 80(S1): 272-297.

- Delli Carpini, Micahel X., and Scott Keeter. 1996. *What Americans know about politics and why it matters*. New Haven: Yale University Press.
- Dilliplane, Susanna, Seth K. Goldman, and Diana C. Mutz. 2013. "Televised exposure to politics: New measures for a fragmented media environment." *American Journal of Political Science* 57(1): 236-248.
- Druckman, James N., Matthew S. Levendusky, and Audrey McLain. 2018. "No Need to Watch: How the Effects of Partisan Media Can Spread via Interpersonal Discussions." *American Journal of Political Science* 62(1): 99–112.
- Fernandez, Bob. 2015. Phillies, Sixers, and Flyers are tanking in TV ratings, too." *The Morning Call*, July 17, 2015. <https://bit.ly/2DaA1Ts>
- Festinger, Leon. 1957. *A Theory of Cognitive Dissonance*. Evanston, IL: Row, Peterson.
- Flaxman, Seth, Sharad Goel, and Justin M. Rao. 2016. "Filter bubbles, echo chambers, and online news consumption." *Public opinion quarterly* 80(1): 298-320.
- Garrett, R. Kelly. 2009. "Politically motivated reinforcement seeking: Reframing the selective exposure debate." *Journal of Communication* 59(4): 676-699.
- Gelman, Andrew, Sharad Goel, Douglas Rivers, and David Rothschild. 2016. "The mythical swing voter." *Quarterly Journal of Political Science* 11(1): 103-130.
- Gentzkow, Matthew, and Jesse M. Shapiro. 2011. "Ideological segregation online and offline." *Quarterly Journal of Economics* 126(4): 1799-1839.
- Green, Donald P., Bradley Palmquist, and Eric Schickler. 2002. *Partisan hearts and minds: Political parties and the social identities of voters*. Yale University Press.
- Guess, Andrew. 2016. "Media Choice and Moderation: Evidence from Online Tracking Data." Working Paper.

- Iyengar, Shanto, and Kyu S. Hahn. 2009. "Red media, blue media: Evidence of ideological selectivity in media use." *Journal of Communication* 59(1): 19-39.
- Iyengar, Shanto, Yphtach Lelkes, Matthew Levendusky, Neil Malhotra, and Sean J. Westwood. 2018. "The Origins and Consequences of Affective Polarization in the United States." Working Paper.
- Jerit, Jennifer, and Jason Barabas. 2012. "Partisan perceptual bias and the information environment." *The Journal of Politics*, 74(3): 672-684.
- Knobloch-Westerwick, Silvia. 2012. "Selective exposure and reinforcement of attitudes and partisanship before a presidential election." *Journal of Communication* 62(4): 628-642.
- Lasswell, Harold. D. 1936. *Politics: Who Gets What, When, How*. New York: Whittlesey House.
- Lazarsfeld, Paul Felix, Bernard Berelson, and Hazel Gaudet. 1948. *The People's choice: how the voter makes up his mind in a presidential campaign*. New York: Columbia University Press.
- Leeper, Thomas J. 2014. "The informational basis for mass polarization." *Public Opinion Quarterly* 78(1): 27-46.
- Levendusky, Matthew. 2013. *How Partisan Media Polarize America*. Chicago: Chicago University Press.
- Mason, Lilliana. 2015. "'I disrespectfully agree': The differential effects of partisan sorting on social and issue polarization." *American Journal of Political Science* 59(1): 128-145.
- Metzger, Miriam J., Ethan H. Hartsell, and Andrew J. Flanagin. 2015. "Cognitive dissonance or credibility? A comparison of two theoretical explanations for selective exposure to partisan news." *Communication Research*: 0093650215613136.

- Montgomery, Jacob M., Brendan Nyhan, and Michelle Torres. 2018. "How conditioning on posttreatment variables can ruin your experiment and what to do about it." *American Journal of Political Science* 62(3): 760-775.
- Peterson, Erik, Sharad Goel, and Shanto Iyengar. 2018. "Echo Chambers and Partisan Polarization: Evidence from the 2016 Presidential Campaign." Working Paper.
- Prior, Markus. 2007. *Post-broadcast democracy: How media choice increases inequality in political involvement and polarizes elections*. Cambridge University Press.
- Prior, Marus. 2013. "Media and political polarization." *Annual Review of Political Science* 16: 101-127.
- Ruggiero, Thomas. E. 2000. "Uses and gratifications theory in the 21st century." *Mass communication & society* 3(1): 3-37
- Stroud, Natalie J. 2008. "Media use and political predispositions: Revisiting the concept of selective exposure." *Political Behavior* 30(3): 341-366.
- Stroud, Natalie J. 2010. "Polarization and partisan selective exposure." *Journal of communication*, 60(3): 556-576.
- Sunstein, Cass. R. 2018. *# Republic: Divided democracy in the age of social media*. Princeton University Press.
- Taber, Charles S., and Milton Lodge. 2006. "Motivated skepticism in the evaluation of political beliefs." *American Journal of Political Science* 50(3): 755-769.
- Van Aelst, Peter, Jesper Strömbäck, Toril Aalberg, Frank Esser, Claes De Vreese, Jörg Matthes, David Hopmann et al. 2017. "Political communication in a high-choice media environment: a challenge for democracy?" *Annals of the International Communication Association* 41(1): 3-27.

Webster, James G., and Thomas B. Ksiazek. 2012. "The dynamics of audience fragmentation:

Public attention in an age of digital media." *Journal of communication* 62(1): 39-56.

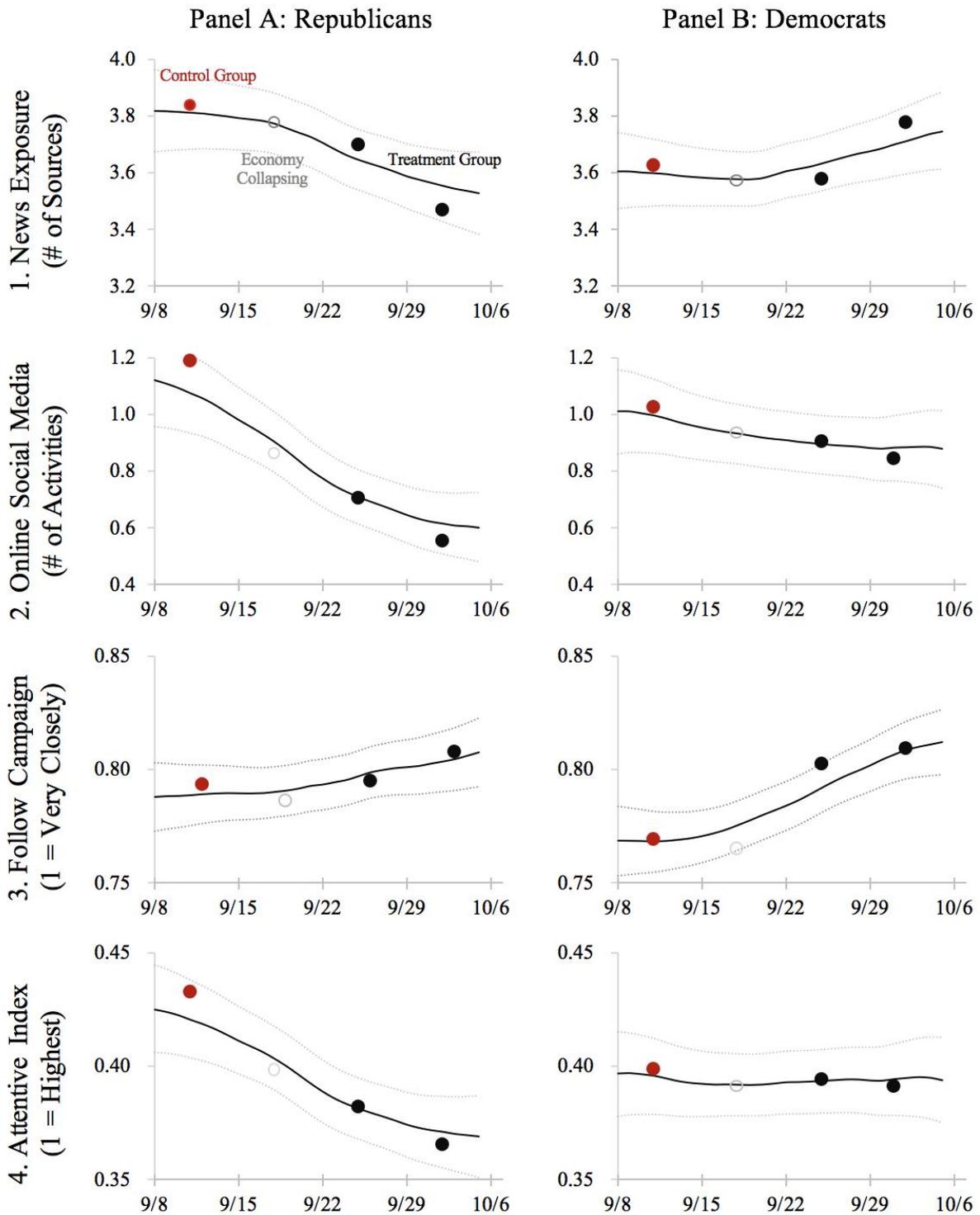
Winter, Stephan, Miriam J. Metzger, and Andrew J. Flanagin. 2016 "Selective use of news cues: A

multiple-motive perspective on information selection in social media environments." *Journal of*

Communication 66, no. 4: 669-693.

Zaller, John. R. 1992. *The Nature and Origins of Mass Opinion*. Cambridge University Press.

Figure 1: Political Attentiveness by Partisanship Around the Collapse of Lehman Brothers in 2008



Note: Solid and dotted lines plot kernel-weighted (Epanechnikov; bandwidth = 5 days) local averages with 95% CIs. Circles plot weekly averages. Lehman Brothers filed for bankruptcy on 9/15. Independent leaners are coded as partisans.

Table 1: Difference in Political Attentiveness by Presidential Performance and In- and Out- Partisanship

	(1) Campaign Interest	(2) Public Affair Interest	(3) Care President Winner	(4) Care Congress Winner	(5) TV News Exposure	(6) News- Paper Exposure	(7) Radio News Exposure
Performance: In-Partisans ($\beta_1 + \beta_3$)	-0.054 (0.062)	-0.038 (0.053)	0.101 (0.100)	0.062 (0.100)	0.050 (0.132)	-0.031 (0.048)	-0.161 (0.133)
Performance: Out-Partisans (β_1)	-0.182* (0.041)	-0.081 (0.039)	-0.163 (0.085)	-0.054 (0.081)	-0.018 (0.120)	-0.019 (0.062)	-0.078 (0.109)
In-Partisan: Perform = 0 (β_2)	-0.078* (0.028)	-0.039 (0.025)	-0.101* (0.043)	-0.112* (0.050)	-0.041 (0.049)	0.015 (0.032)	0.048 (0.043)
Perform \times In-Partisan (β_3)	0.128* (0.042)	0.043 (0.037)	0.264* (0.073)	0.117 (0.067)	0.068 (0.074)	-0.012 (0.049)	-0.082 (0.079)
Intercept (β_0)	0.678* (0.031)	0.665* (0.019)	0.810* (0.054)	0.669* (0.037)	0.810* (0.073)	0.720* (0.038)	0.492* (0.070)
Observations	47805	31990	29418	23635	32363	26663	24305
Dependent Variable Range	0-1	0-1	Binary	Binary	Binary	Binary	Binary
Number of Elections in Model	28	23	16	16	21	20	17
Earliest Election in Model	1952	1960	1952	1966	1952	1952	1952
Latest Election in Model	2016	2008	2012	2008	2012	2008	2004

Note: Estimates of Equation 3. Republicans are coded as in-partisans under Republican administrations (e.g., 2008), and Democrats are coded as in-partisans under Democratic administrations (e.g., 2012). Presidential performance is measured by approval ratings in Gallup Polls fielded in September of each year. Poll ratings are rescaled to 0-1 where 0 and 1 respectively indicate 24% and 76%. Standard errors are adjusted for year clusters. Dependent variables are continuous unless noted otherwise. * $p < 0.05$.

Table 2: The Treatment Effect of Financial Crisis by Partisanship

Treated Group Bandwidth		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		News Exposure (# of Sources)		Social Media (# of Activities)		Campaign Interest (1 = Very Closely)		Attentiveness Index (1 = Highest)	
9/22 - 9/28	Treated: Rep ($\beta_1 + \beta_3$)	-0.140 (0.124)	-0.141 (0.131)	-0.480** (0.107)	-0.494** (0.120)	0.002 (0.012)	-0.001 (0.012)	-0.050** (0.014)	-0.050** (0.014)
	Treated: Dem (β_1)	-0.045 (0.092)	-0.052 (0.082)	-0.121 (0.091)	-0.085 (0.101)	0.033** (0.013)	0.031** (0.011)	-0.004 (0.011)	-0.000 (0.010)
	Treated \times Rep (β_3)	-0.096 (0.150)	-0.089 (0.152)	-0.359** (0.157)	-0.409** (0.172)	-0.032 (0.016)	-0.032* (0.015)	-0.046** (0.018)	-0.050** (0.018)
	Observations	2602	2602	838	838	3235	3235	838	838
9/22 - 10/5	Treated: Rep ($\beta_1 + \beta_3$)	-0.248** (0.095)	-0.217** (0.095)	-0.535** (0.113)	-0.54** (0.114)	0.008 (0.009)	0.009 (0.009)	-0.058** (0.014)	-0.055** (0.014)
	Treated: Dem (β_1)	0.054 (0.097)	0.077 (0.081)	-0.151 (0.105)	-0.125 (0.104)	0.037** (0.012)	0.040** (0.011)	-0.006 (0.010)	-0.001 (0.008)
	Treated \times Rep (β_3)	-0.302* (0.145)	-0.294* (0.131)	-0.384** (0.159)	-0.417** (0.158)	-0.029 (0.016)	-0.031* (0.014)	-0.052** (0.018)	-0.054** (0.015)
	Observations	3788	3788	1287	1231	4746	4746	1231	1231
9/22 - 10/19	Treated: Rep ($\beta_1 + \beta_3$)	-0.237** (0.090)	-0.187** (0.087)	-0.535** (0.113)	-0.521** (0.116)	0.015 (0.008)	0.017 (0.008)	-0.056** (0.014)	-0.052** (0.014)
	Treated: Dem (β_1)	0.079 (0.084)	0.103 (0.070)	-0.151 (0.105)	-0.122 (0.106)	0.038** (0.010)	0.041** (0.009)	-0.006 (0.009)	-0.000 (0.008)
	Treated \times Rep (β_3)	-0.316** (0.126)	-0.290** (0.114)	-0.384** (0.159)	-0.399** (0.161)	-0.023 (0.013)	-0.024* (0.012)	-0.051** (0.018)	-0.052** (0.016)
	Observations	6037	6037	1287	1287	7531	7531	1287	1287
DV Range		0-17	0-17	0-5	0-5	0-1	0-1	0-1	0-1
Covariates		No	Yes	No	Yes	No	Yes	No	Yes

Note. Control group bandwidth is 9/8-9/14 for all models. All dependent variables are continuous. Models in Columns 4 to 6 include pre-treatment covariates (turnouts in previous elections and demographics) and their interactions with party ID (coefficients omitted). Full results are reported in Online Appendix E. Standard errors are adjusted for states. * $p < 0.05$ ** Adjusted $p < 0.05$ (Holm's correction for 3 multiple tests for 3 different treatment group bandwidths).

Online Appendix

Appendix A: Bayesian Simulations

Appendix B: Study 1 Measurement

Appendix C: Study 2 Measurement

Appendix D: Study 2 Placebo Tests

Appendix E: Study 2 Full Regression Estimates and Robustness Checks

Appendix A: Bayesian Simulations

In this appendix, we provide a formal definition of temporal selective exposure and examine its theoretical implications for partisan polarization. We use a simulation approach to show how temporal selective exposure can lead partisans to polarize over time even when they have the same media diet and interpret new information without partisan biases.

We express the way voters learn about presidential performance as a probability distribution (see Bullock, 2009). Let γ be the newly-elected president's true competence level, and $\hat{\gamma}_0$ be a voter's belief about γ at the time of inauguration. A positive value indicates the president is competent. Similar to prior work (e.g., Bartels, 2002; Bullock, 2009), we assume $\hat{\gamma}_0$ is normally distributed $N(\hat{\gamma}_0, \sigma_0^2)$, where the variance σ_0^2 captures the uncertainty of the prior belief.

Throughout the first presidential term, the voter updates her belief in light of new information received. Suppose that the voter revises her belief about the president's competence level twice a year. Let x_1 be the summary of all information about the president's competence produced in the first six months of the term, where a positive value indicates, again, that the president is competent. x_1 is drawn from $N(\gamma, \sigma_1^2)$, where σ_1^2 captures the uncertainty of the new information. If the voter is exposed to the full spectrum of new information, her belief about the president's competence at the end of the first term will be the precision-weighted average of the prior and new information, $\hat{\gamma}_8 = \frac{\hat{\gamma}_0\tau_0 + x_1\tau_1 + \dots + x_8\tau_8}{\tau_0 + \tau_1 + \dots + \tau_8}$, where $\tau_0 = 1/\sigma_0^2$ and $\tau_t = 1/\sigma_t^2$ respectively capture the precisions of the prior and new information at time t .

However, most people do not stay fully informed about politics. Hence, a more realistic representation of her posterior belief can be written as:

$$\hat{\gamma}_8^* = \frac{\hat{\gamma}_0\tau_0 + x_1a_1\tau_1 + \dots + x_8a_8\tau_8}{\tau_0 + a_1\tau_1 + \dots + a_8\tau_8}, \quad (\text{Equation 1})$$

where a_t is the rate of attention the voter applies to new information about the president's competence at time t .¹⁷ If the voter completely tunes out the news (i.e., $a_1 = a_2 = \dots = a_8 = 0$), for example, new information will be weighted by 0; and thus, her posterior belief will be equivalent to her prior belief at time 0.

Importantly, the rate of attention may vary as a function of the value of information, $a_t = f(x_t)$. For the theory of temporal selective exposure, the key question is whether and how the attention function differs by partisanship. The null hypothesis is that the attention function is the same for in- and out-partisans—i.e., $H_0: f_{IN}(x_t) = f_{OUT}(x_t)$. Under this condition, partisans with the same media diet will have a common knowledge base, and thus their beliefs about the president's competence level would not be polarized.

The alternative hypothesis—i.e., the temporal selective exposure hypothesis—is that in- and out-partisans choose when to pay attention to the news depending on the value of new information: $f_{IN}(x_t) \neq f_{OUT}(x_t)$. For example, a flow of headlines signaling a very low value of x_t (e.g., “Economy in crisis”) may cause in-partisans to pay less attention than usual, and out-partisans to pay more attention than usual. And when in- and out-partisans attach differential weights to the incoming flows of new information (x_1, x_2, \dots, x_8), their perceptions of γ may polarize over time even if they have the same media diet. To formalize this possibility, we assume the relationship between the value of new information flows and attention can be represented by logistic functions:

¹⁷ It ranges from 0 to 1 such that new information at time t is given less weight as the voter pays less attention to politics in time t .

$$f_{IN}(x_t) = \frac{L}{1 + e^{-Kx_t}} \quad (\text{Equation 2a}),$$

$$f_{OUT}(x_t) = \frac{L}{1 + e^{Kx_t}} \quad (\text{Equation 2b}),$$

where L is a parameter that determines overall attention rate and K is a parameter that determines the relationship between x_t and a_t . For any $K > 0$, the relationship between x_t and a_t will be positive for in-partisans and negative for out-partisans.

We first plot the attention functions in the upper panels of Figure A1. Panels A and B respectively depict $f_{IN}(x_t)$ and $f_{OUT}(x_t)$ under a range of values in L and K .¹⁸ In the leftmost column ($L = 0.1$), people pay little attention to politics in general. In the rightmost column ($L = 1$), people are generally attentive, learning 50 % of new information on average and up to 100% under certain circumstances. In the facets in the top row ($K = 0$), attention levels do not vary across the values of x_t for in-partisans nor out-partisans. In the facets in the successive rows ($K > 0$), however, in-partisans pay more attention when the news flows are favorable to the president ($x_t > 0$) and out-partisans pay more attention when the opposite is the case ($x_t < 0$). Higher values in K indicate that the temporal ups and downs of selective exposure are more pronounced. The facets in the bottom row ($K = 5$), for example, indicate that partisans pay almost no attention to politics when faced with uncongenial information flows ($x_t < 0$ for in-partisans and $x_t > 0$ for out-partisans).

In the lower panels of Figure A1, we illustrate the hypothetical patterns of belief updating about presidential competence using the attention functions described above. In each facet, we plot 100 simulations in which either an in-partisan or out-partisan voter updates their beliefs

¹⁸ We consider a range of possible values of L and K , to specify the hypothetical conditions under which sharp and frequent polarization could occur.

eight times in light of new information flows (x_t) where $t \in \{1,2,3,4,5,6,7,8\}$. Suppose that the in- and out-partisan voters use the media sources that deliver the same information. That precludes a scenario where they receive different sets of information in a given time (e.g., where the in-partisan observes $x_t > 0$ and the out-partisan observes $x_t < 0$ because their information sources are biased). Suppose further that their interpretation of new information is always correct. That precludes them from receiving a piece of new information $x_t = -1$ and perceiving it as having a value different from -1 . These conditions rule out most of the theoretical mechanisms thought to create partisan polarization (Stroud 2010; Taber & Lodge, 2006; Zaller, 1992). The point of the simulations is to show that temporal selective exposure can increase partisan disagreement even when such ideal conditions are met.

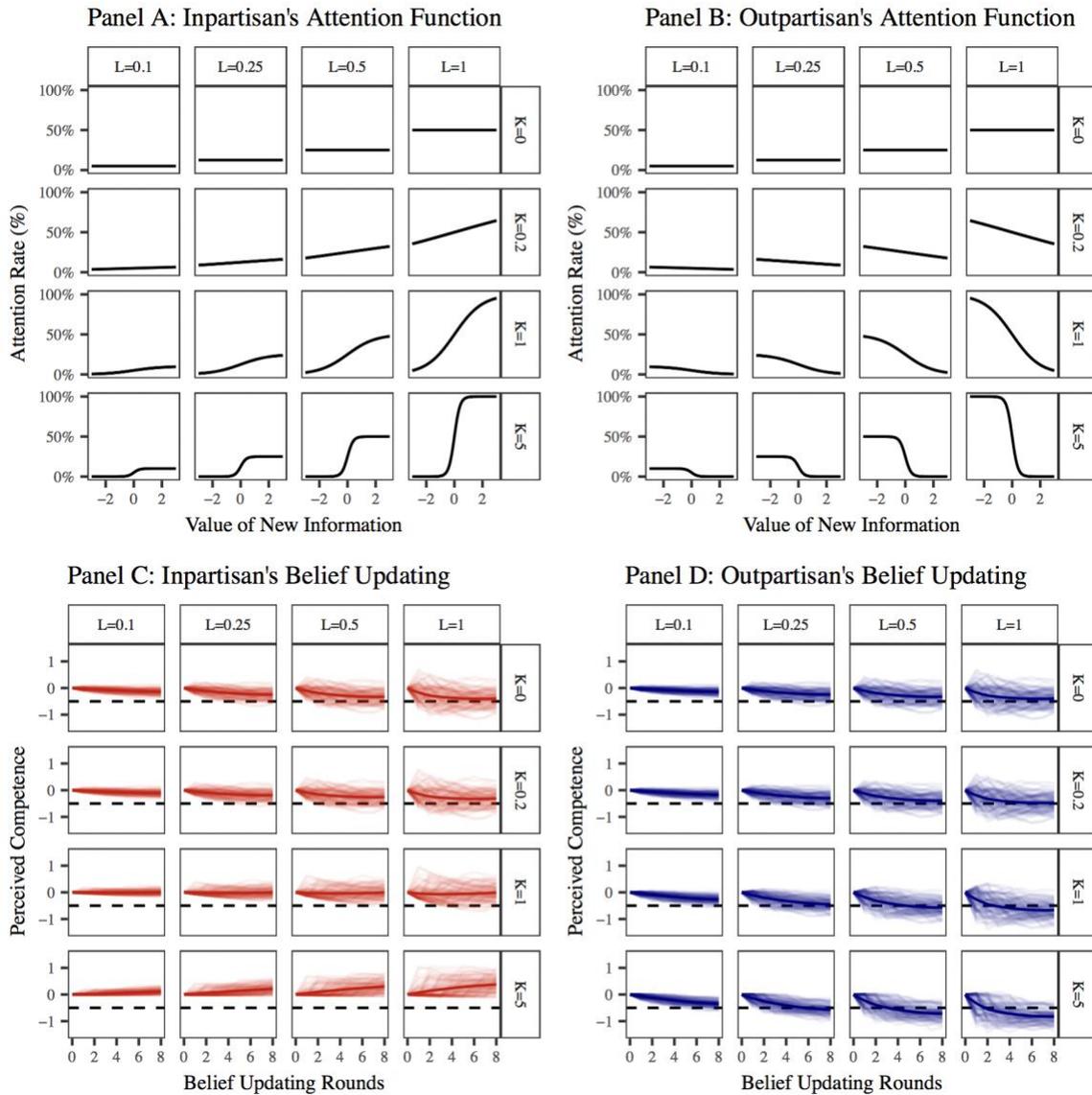
In the simulations depicted in Figure A1, the in- and out-partisans start with the same prior belief, $\hat{\gamma}_0 \sim N(0,1)$, that new information is drawn from $x_t \sim N(-0.5,1)$ where a majority of new information (69%) suggests that the president is incompetent. Asymptotically, both in- and out-partisans should adjust their beliefs about presidential competence downward and converge toward -0.5 if they give full attention to all information.

The top rows of all panels show that in- and out-partisans' beliefs tend toward -0.5 exactly in the same way when $K = 0$ —that is, their attention rate is independent of whether new information is favorable to the president. This is a special case of the null hypothesis $f_{IN}(x_t) = f_{OUT}(x_t)$, under which belief polarization does not occur. The successive rows, when $K > 0$, show that voters may polarize. However, the extent of polarization would hinge on their sensitivities to uncongenial information (K) and their average attention levels (L). Partisans' beliefs would further polarize if they are quicker to adjust their attention rates based on the value of new information (i.e., high values of K) or if their overall news consumption is high (i.e., high

values of L). As illustrated in the bottom row, when the degree of attention adjustment is high ($K=5$), in- and out-partisans hold the opposite beliefs by the end of the first term of the presidency. In particular, in-partisans conclude that the president is competent even though the majority of new information indicates that the president is incompetent.

Granted, the bottom rows depict an extreme scenario ($K = 5$) where partisans completely tune out the news in response to uncongenial information flows. Temporal selective exposure in practice is probably not as dramatic, and neither is its contribution to mass polarization on factual beliefs. But the point is that understanding the effect of media exposure on polarization remains incomplete without examining the temporal selective exposure hypothesis. In the main text, we use two empirical strategies to test whether partisans indeed have different attention functions, against the null: $H_0: f_{IN}(x_t) = f_{OUT}(x_t)$ —a long overdue first step.

Figure A1: Attention Rate by Partisanship and Logistic Function Parameters



Note: Panel A plots Equation 2a: $f_{IN}(x_t) = L/1 + e^{-Kx_t}$ and Panel B plots Equation 2b: $f_{Out}(x_t) = L/1 + e^{Kx_t}$ where x_t denotes the value of new information. Higher values of the L parameter indicate larger amounts of overall learning. Higher values of the K parameter indicate more sensitive changes in attention rates in response to the value of new information. In Panels C and D, the thin line in each facet plots 100 simulations of belief change. The thick line in each facet plots the average of the 100 simulations. The dashed line represents the benchmark toward which the partisans' beliefs are predicted to approach when equal amounts of attention are paid to every value of x_t . The new information is drawn from $x_t \sim N(-0.5, 1)$, where about 69% of new information would suggest that the president is incompetent. Panel C depicts belief change of an in-partisan voter who revises his belief according to Equation 1 and Panel A (Equation 2a). Panel D depicts belief change of an out-partisan voter who revises his belief according to Equation 1 and Panel B (Equation 2b).

Appendix B: Study 1 Measurement

In this appendix, we detail the measurement procedure in Study 1. We list the variable names in the ANES datafile. Full questionnaire wordings and more information about the data can be found at: <https://electionstudies.org/project/anes-time-series-cumulative-data-file>.

In-partisanship. We recoded the 7-point “Party Identification of Respondent” variable provided by the ANES (*VCF0301* in the time series cumulative data file) into a dummy variable where 0 indicates identification with the non-incumbent party (e.g., Republicans in 2016) and 1 indicates identification with the incumbent party (e.g., Democrats in 2016). Independents leaning toward either party were treated as partisans. Pure independents were excluded.

Campaign interest. We used “Interest in the Elections” (*VCF0310*) provided by the ANES. We rescaled the variable 0-1 so that 1 indicates the highest level of interest.

Public Affair interest. We used “Interest in Public Affairs” (*VCF0313*) provided by the ANES. We rescaled the variable 0-1 so that 1 indicates the highest level of interest.

Care. We used “Does Respondent Care Which Party Wins Presidential Election” variable (*VCF0311*) and “Does Respondent Care Which Party Wins Congressional Election” variable (*VCF0312*). Both variables are coded binary (in the original datafile) where 0 indicates “not much” or “not at all” and 1 indicates “a good deal” or “very much.”

News Exposure. The ANES measured exposure to campaign information on television (*VCF0724*), on radio (*VCF0725*), and in newspaper (*VCF0727*). Each of the news exposure questions was coded so that 0 indicates “no” and 1 indicates “yes.”

Presidential performance. We used presidential approval ratings gathered by Gallup in September of each election year as a proxy for overall presidential performance. The lowest and highest ratings were respectively 24% and 76%. These numbers were rescaled to 0-1 in the

regression analyses. The raw data can be found at

<http://www.gallup.com/interactives/185273/presidential-job-approval-center.aspx>.

Appendix C: Study 2 Measurement

In this appendix, we detail the measurement procedure in Study 2. We list the variable names in the NAES datafile. Full questionnaire wordings and more information about the data can be found at: <https://studies.annenbergpublicpolicycenter.org/naes08/Phone/index.html>.

Treatment. The *Date_c* variable in the NAES file contains interview date information. We created dummy variables where 0 indicates the control group and 1 indicates the treatment group following the definitions applicable to each statistical analysis.

Republican. We first constructed a 7-point scale of party identification based on three variables provided by the NAES (*MA01_c*, *MA02_c* and *MA03_c*). We then recoded the scale into a dummy variable where 0 indicates identification with the Democratic Party and 1 indicates identification with the Republican Party. Independents leaning toward either party were treated as partisans. Pure independents were excluded.

News Exposure. We constructed an additive index of the number of political television programs, radio shows, newspapers, and online websites, which ranges from 0 to 17. We detail how the number of outlets was coded for each channel.

TV News. Respondents were asked “In the past week, from what television program did you get most of your information about the 2008 presidential campaign?” (EB03) and “In the past week, did you watch any other television programs that contained information about the 2008 presidential campaign? [If yes:] Which ones?” (EB06). The NAES coded the answers to these questions into categorical variables indicating whether respondent watched each of the following programs:

EB03_c; EB06rAA (ABC (unspecified)); EB06rAB (ABC World News with Charles Gibson); EB06rAC (Anderson Cooper 360); EB06rAD (CBS (unspecified)); EB06rAE (CBS Evening News with Katie Couric); EB06rAF (Christian Broadcasting Network); EB06rAG (CNN (unspecified)); EB06rAH (Countdown with Keith Olbermann); EB06rAJ (Fox News Channel (unspecified)); EB06rAK (Fox Report with Shepard Smith); EB06rAL (Glenn Beck); EB06rAM (Hannity and Colmes); EB06rAN (Hardball with Chris Matthews); EB06rAP (Headline News); EB06rAQ (Larry King Live); EB06rAR (Local news (unspecified)); EB06rAS (Lou Dobbs Tonight); EB06rAT (Meet the Press); EB06rAU (MSNBC (unspecified)); EB06rAV (Nancy Grace); EB06rAW (NBC (unspecified)); EB06rAY (NBC Nightly News with Brian Williams); EB06rBA (NewsHour with Jim Lehrer); EB06rBB (Nightline); EB06rBC (O'Reilly Factor); EB06rBD (On the Record with Greta Van Susteren); EB06rBE (PBS (unspecified)); EB06rBF (700 Club); EB06rBG (Situation Room with Wolf Blitzer); EB06rBH (Special Report with Brit Hume); EB06rBJ (Today); EB06rBK (Tucker (Tucker Carlson)); EB06rBL (Your World with Neil Cavuto); EB06rZZ (Other (verbatim answer in EB06rZZv)).

We counted the number of programs named by each respondent.

Radio News. Respondents were asked “Thinking about the past week, how many days did you hear information about the 2008 presidential campaign on radio shows that invite listeners to call in to discuss current events, public issues, or politics? This includes hearing the shows on the radio, or on the Internet, your cell phone, iPod, or PDA.” (EC01) “In the past week, from which talk radio host or radio program did you get most of your information about the 2008 presidential campaign?” (EC02) and “In the past week, did you listen to any other talk radio

hosts or radio programs for information about the 2008 presidential campaign? [If yes:] Which ones?" (EC04). The NAES coded the answers to these questions into categorical variables indicating whether respondent watched each of the following programs:

EC04rAA (All Things Considered); EC04rAB (Beck, Glenn); EC04rAC (Bennett, Bill); EC04rAD (Bohannon, Jim); EC04rAE (Boortz, Neal); EC04rAF (Christian radio (unspecified)); EC04rAG (Doyle, Jerry); EC04rAH (Focus on the Family); EC04rAJ (Gallagher, Mike); EC04rAK (Hannity, Sean); EC04rAL (Howard, Clark); EC04rAM (Ingraham, Laura); EC04rAN (Joyner, Tom); EC04rAP (Levin, Mark); EC04rAQ (Limbaugh, Rush); EC04rAR (Local news radio (unspecified)); EC04rAS (Local talk radio (unspecified)); EC04rAT (Morning Edition); EC04rAU (NPR (unspecified)); EC04rAV (O'Reilly, Bill); EC04rAW (Savage, Michael); EC04rAY (Schlessinger, Laura); EC04rZZ (Other (verbatim answer in EC04rZZv)).

We counted the number of programs named by each respondent.

Newspaper. Respondents were asked "Thinking about the past week, how many days did you read a newspaper for information about the 2008 presidential campaign? This includes reading a paper copy of the newspaper, an online copy, or a newspaper item downloaded on your cell phone, iPod, or PDA." (ED01) "In the past week, from what newspaper did you get most of your information about the 2008 presidential campaign?" (ED02) and "In the past week, did you read any other newspapers for information about the 2008 presidential campaign? [If yes:] Which ones?" (ED04). The NAES coded the answers to these questions into categorical variables indicating whether respondent watched each of the following papers:

ED04rAA (Arizona Republic); ED04rAB (Atlanta Journal Constitution); ED04rAC (Baltimore Sun); ED04rAD (Boston Globe); ED04rAE (Chicago Sun-Times) ED04rAF

(Chicago Tribune); ED04rAG (Cleveland Plain Dealer); ED04rAH (Concord Monitor); ED04rAJ (Dallas Morning News); ED04rAK (Denver Post); ED04rAL (Des Moines Register); ED04rAM (Detroit Free Press); ED04rAN (Houston Chronicle); ED04rAP (Los Angeles Times); ED04rAQ (Miami Herald); ED04rAR (New Hampshire Union Leader); ED04rAS New York Daily News); ED04rAT (New York Post); ED04rAU (New York Times); ED04rAV (Newsday); ED04rA(WOrange County Register); ED04rAY (Oregonian); ED04rBA (Philadelphia Inquirer);ED04rBB (Rocky Mountain News); ED04rBC (San Diego Union-Tribune); ED04rBD (San Francisco Chronicle); ED04rBE (San Jose Mercury News); ED04rBF (St. Louis Post-Dispatch); ED04rBG (St. Petersburg Times); ED04rBH (Star Tribune (Minneapolis)); ED04rBJ (Star-Ledger (Newark)); ED04rBK (USA Today); ED04rBL (Wall Street Journal); ED04rBM (Washington Post); ED04rZZ Other ((verbatim answer in ED04rZZv));

We counted the number of programs named by each respondent.

Online websites. Respondents were asked “How many days in the past week did you see or hear information about the 2008 presidential campaign on the Internet? This may include accessing the Internet through your cell phone, iPod, or PDA.” (EE02) “In the past week, where did you get most of your information about the 2008 presidential campaign online?” (EE03) and “In the past week, did you get information about the 2008 presidential campaign from anywhere else online? [If yes:] Where?” (ED05). The NAES coded the answers to these questions into categorical variables indicating whether respondent watched each of the following papers:

EE05rAA ABC News.com EE05rAB AOL EE05rAC CBS News.com EE05rAD
 CNN.com EE05rAE Comcast EE05rAF Daily Kos EE05rAG Democratic Party website
 EE05rAH Drudge Report EE05rAJ Emails (unspecified) EE05rAK Fox News.com

EE05rAL Google EE05rAM Home page (unspecified) EE05rAN Huffington Post
EE05rAP Instapundit EE05rAQ MichelleMalkin.com EE05rAR MSN EE05rAS
MSNBC.com EE05rAT National Journal.com EE05rAU NBC News.com EE05rAV New
Republic.com EE05rAW New York Times.com EE05rAY Power Line EE05rBA
Republican Party website EE05rBB Slate EE05rBC Talking Points Memo EE05rBD
Think Progress EE05rBE Townhall EE05rBF Wall Street Journal.com EE05rBG
Washington Post.com EE05rBH Yahoo! EE05rBJ YouTube EE05rZZ Other (verbatim
answer in EE05rZZv)

We counted the number of programs named by each respondent.

Social Media Use. We counted the number of online political activities in which they engaged in the previous week. These activities include visiting a campaign website (KG02_c), watching an online campaign video (KG09_c), forwarding online campaign information (KG13_c), discussing politics online (KG19_c), and contributing to political blogs (KG23_c). This variable ranges between 0 and 5.

Campaign Interest measured how closely respondents were following the campaign (KA01_c). This variable was coded so that 0 indicates “not closely at all” and 1 “indicates very closely.”

Political Attentiveness Index was constructed by combining the three variables (news exposure, online media use and campaign interest). To do so, we first standardized each variable and took the average (Cronbach’s alpha = 0.60) and rescaled the variable 0-1 so that 1 indicates the highest level of attentiveness.

Pretreatment Covariates. For balance checks and covariate adjustments, we used turnout in 2004 (RD01_c), turnout in 2006 (RD02_c), turnout in the 2008 primaries (RBb02_c),

vote for bush in 2004 (RD01_c), vote for the Republican party in 2006 (RD03_c), vote for the Republican Party in the 2008 primaries (RBb02_c), race (WC03_c), college degree (WA03_c), age (WA02_c), \$75,000 or higher house hold income (WA04_c and WA05_c), and gender (WA01_c), urban/suburban residency (WFC02_c).

Appendix D: Study 2 Placebo Tests

Table D1: Balance Check

Covariate	Treat		Constant		N
Republican	-0.013	(0.014)	0.462*	(0.017)	4746
Turnout (2008 Primary)	-0.015	(0.015)	0.514*	(0.021)	5396
Turnout (2004 Election)	-0.008	(0.012)	0.822*	(0.011)	5396
Turnout (2006 Election)	-0.020	(0.012)	0.744*	(0.013)	5396
Age	0.593	(0.431)	52.887*	(0.377)	5280
Female	-0.008	(0.015)	0.578*	(0.013)	5396
White	-0.012	(0.009)	0.873*	(0.011)	5213
Black	0.005	(0.009)	0.076*	(0.009)	5213
Income (>75K)	-0.021	(0.020)	0.417*	(0.020)	4683
College	-0.005	(0.013)	0.522*	(0.012)	5269
Employed	-0.013	(0.018)	0.504*	(0.014)	5298
Married	-0.015	(0.012)	0.637*	(0.012)	5278
Urban/Suburban	0.001	(0.009)	0.810*	(0.024)	5396
Internet Access	-0.015	(0.012)	0.804*	(0.012)	5396

Note. This table shows that there was no significant difference in pre-treatment covariates between the control group (9/8-9/14) and the treatment group (9/22-9/25). The model specifications are similar to the models without covariates presented in the main text (Table 2).

* $p < 0.05$

Table D2: Placebo check on the interaction between treatment and partisanship

Covariate	Treat		Republican		Treat x Rep		Constant		N
Turnout (2008 Primary)	-0.024	(0.016)	-0.064*	(0.021)	0.013	(0.027)	0.580*	(0.022)	4746
Turnout (2004 Election)	-0.020	(0.020)	0.098*	(0.015)	0.009	(0.024)	0.810*	(0.015)	4746
Turnout (2006 Election)	-0.028	(0.021)	0.056*	(0.023)	0.011	(0.030)	0.733*	(0.018)	4746
Age	1.296	(0.706)	1.231	(0.833)	-1.066	(0.814)	52.395*	(0.647)	4663
Female	-0.015	(0.019)	-0.101*	(0.022)	0.015	(0.026)	0.629*	(0.015)	4746
White	-0.017	(0.015)	0.125*	(0.018)	0.021	(0.017)	0.816*	(0.015)	4617
Black	0.000	(0.017)	-0.129*	(0.015)	0.006	(0.016)	0.137*	(0.016)	4617
Income (>75K)	-0.009	(0.026)	0.133*	(0.028)	-0.019	(0.032)	0.357*	(0.024)	4159
College	0.006	(0.021)	0.072*	(0.024)	-0.032	(0.030)	0.498*	(0.019)	4651
Employed	-0.022	(0.021)	0.011	(0.020)	0.014	(0.027)	0.500*	(0.017)	4669
Married	-0.008	(0.021)	0.156*	(0.026)	-0.010	(0.032)	0.565*	(0.019)	4655
Urban/Suburban	-0.014	(0.014)	-0.071*	(0.024)	0.037	(0.024)	0.843*	(0.023)	4746
Internet Access	-0.017	(0.019)	0.064*	(0.019)	0.006	(0.023)	0.778*	(0.017)	4746

Note. This table shows that there was no significant interaction between treatment status and partisanship in pre-treatment covariates. The model specifications are similar to the models without covariates presented in the main text (Table 2).

* $p < 0.05$

Table D3: Placebo Trends in Political Attentiveness between 8/15 and 9/14

	(1) News Exposure (# of Sources)	(2) Social Media (# of Activities)	(3) Follow Campaign (1 = Very Closely)	(4) Attentiveness Index (1 = Highest)
Day	0.024* (0.005)	0.015* (0.003)	0.001* (0.001)	0.002* (0.000)
Republican	0.137 (0.112)	0.003 (0.116)	0.034* (0.011)	0.017 (0.012)
Day X Republican	0.002 (0.006)	0.002 (0.005)	0.002* (0.001)	0.001 (0.001)
Intercept	3.866* (0.103)	1.080* (0.074)	0.775* (0.012)	0.417* (0.011)
N	5668	2700	7110	2700

Note. This table addresses the concern that Republicans' political attentive news was already in decline—and therefore the results we reported in the main text capture the continuing trend, not a true turning point around the treatment period. Each of the four dependent variables were regressed on day (running from 8/15 to 9/14), partisanship and the interaction between the two in order to the pretreatment trends among Democrats and Republicans in the month reading up to the economic meltdown. The positive and significant coefficients on Day indicate that Democrats were becoming more attentive throughout the month, and the positive coefficients on Day X Republican indicate the pattern was more salient for Republicans, if anything.

* $p < 0.05$

Appendix E: Study 2 Full Regression Estimates and Robustness Checks

Table E1: Full Regression Estimates of Table 2

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Media Expos. 9/22 -9/28	Media Expos. 9/22 -9/28	Media Expos. 9/22 -10/05	Media Expos. 9/22 -10/05	Media Expos. 9/22 -10/19	Media Expos. 9/22 -10/19	Social Media 9/22 -9/28	Social Media 9/22 -9/28	Social Media 9/22 -10/05	Social Media 9/22 -10/05	Social Media 9/22 -10/19	Social Media 9/22 -10/19
Covariates	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Treated	-0.045 (0.092)	-0.052 (0.082)	0.054 (0.097)	0.077 (0.081)	0.079 (0.084)	0.103 (0.070)	-0.121 (0.091)	-0.085 (0.101)	-0.154 (0.104)	-0.125 (0.104)	-0.151 (0.105)	-0.122 (0.106)
Republican	0.215+ (0.122)	0.637 (0.578)	0.215+ (0.122)	-0.054 (0.472)	0.215+ (0.122)	0.093 (0.384)	0.164 (0.127)	1.112+ (0.611)	0.164 (0.127)	0.386 (0.425)	0.164 (0.127)	0.365 (0.425)
Treated × Republican	-0.096 (0.150)	-0.089 (0.152)	-0.302* (0.145)	-0.294* (0.131)	-0.316* (0.126)	-0.290* (0.114)	-0.359* (0.157)	-0.409* (0.172)	-0.401* (0.157)	-0.417* (0.158)	-0.384* (0.159)	-0.399* (0.161)
Primary Turnout		0.541* (0.135)		0.429* (0.091)		0.415* (0.067)		0.362* (0.138)		0.232* (0.097)		0.212* (0.097)
Primary Turnout × Republican		-0.115 (0.179)		0.049 (0.127)		-0.004 (0.095)		-0.120 (0.203)		0.100 (0.140)		0.138 (0.136)
Turnout in 2006		0.414* (0.159)		0.382* (0.127)		0.377* (0.091)		-0.218 (0.197)		-0.064 (0.147)		-0.034 (0.136)
Turnout in 2006 × Republican		0.010 (0.209)		0.026 (0.181)		0.149 (0.137)		0.410 (0.290)		0.251 (0.202)		0.213 (0.186)
Turnout in 2004		0.301+ (0.163)		0.373* (0.140)		0.232* (0.110)		0.347* (0.147)		0.205+ (0.114)		0.202+ (0.111)
Turnout in 2004 × Republican		0.181 (0.329)		0.211 (0.226)		0.238 (0.154)		-0.524 (0.348)		-0.249 (0.227)		-0.244 (0.219)
Age (36-55)		0.046 (0.179)		0.051 (0.119)		0.086 (0.102)		-0.093 (0.210)		-0.233 (0.159)		-0.239 (0.152)
Age (56-)		-0.088 (0.187)		-0.055 (0.144)		0.013 (0.107)		-0.231 (0.218)		-0.250 (0.169)		-0.257 (0.161)
Age Missing Dummy		0.030 (0.634)		0.257 (0.556)		-0.200 (0.406)		0.605 (1.020)		0.601 (0.590)		0.597 (0.557)
Age (36-55) × Republican		0.023 (0.237)		-0.048 (0.169)		-0.054 (0.139)		-0.167 (0.234)		-0.054 (0.183)		-0.108 (0.186)
Age (56-) × Republican		0.054 (0.254)		0.008 (0.217)		-0.066 (0.173)		-0.111 (0.298)		-0.150 (0.215)		-0.216 (0.218)
Age Missing × Republican		-0.772 (0.627)		-0.775 (0.688)		-0.025 (0.470)		-1.069 (1.311)		-0.928 (0.764)		-0.988 (0.721)
Female		-0.355* (0.118)		-0.350* (0.097)		-0.286* (0.064)		0.028 (0.097)		-0.000 (0.061)		-0.008 (0.058)
Female × Republican		-0.209 (0.172)		-0.195 (0.126)		-0.316* (0.095)		-0.158 (0.153)		-0.106 (0.114)		-0.108 (0.116)
White		0.303 (0.236)		-0.039 (0.209)		0.020 (0.188)		0.183 (0.208)		0.121 (0.224)		0.108 (0.201)
Race Missing Dummy		0.788 (0.627)		0.217 (0.405)		-0.279 (0.266)		0.316 (0.910)		0.256 (0.474)		0.280 (0.459)
White × Republican		-0.719 (0.445)		0.080 (0.296)		0.069 (0.244)		-0.461 (0.420)		0.013 (0.299)		0.111 (0.277)
Race Missing × Republican		-0.517 (1.159)		0.145 (0.993)		0.914 (0.611)		1.083 (1.047)		1.233 (0.755)		0.902 (0.787)
Black		0.757* (0.274)		0.382+ (0.227)		0.462* (0.172)		0.408 (0.344)		0.343 (0.338)		0.317 (0.322)
Black × Republican		-1.452+ (0.796)		-0.295 (0.711)		-0.142 (0.464)		0.101 (0.878)		0.215 (0.536)		0.291 (0.520)
College		0.852* (0.089)		0.900* (0.073)		0.941* (0.055)		0.373* (0.116)		0.363* (0.089)		0.402* (0.088)
College Missing Dummy		0.276 (0.652)		0.333 (0.745)		0.205 (0.527)		-1.082+ (0.565)		-0.307 (0.605)		-0.280 (0.495)
College × Republican		-0.430* (0.153)		-0.438* (0.120)		-0.527* (0.091)		-0.190 (0.183)		-0.150 (0.135)		-0.163 (0.123)
College Missing × Republican		-1.967* (0.948)		-1.483 (0.926)		-1.030 (0.626)		-2.068 (1.684)		-0.346 (0.767)		-0.276 (0.709)
Employed		-0.104 (0.116)		-0.040 (0.100)		0.016 (0.080)		-0.212+ (0.116)		-0.084 (0.115)		-0.073 (0.112)
Employed Missing Dummy		-1.399* (0.668)		-0.717 (0.815)		-0.336 (0.522)		-0.637 (0.586)		-1.124 (0.735)		-1.062+ (0.595)
Employed × Republican		0.142 (0.203)		0.124 (0.165)		0.126 (0.130)		0.158 (0.152)		0.042 (0.142)		0.021 (0.141)
Employed Missing × Republican		1.060 (0.818)		0.131 (0.862)		-0.286 (0.633)		-0.484 (0.567)		0.674 (0.828)		0.588 (0.674)
Married		0.024 (0.104)		0.070 (0.075)		0.076 (0.058)		-0.065 (0.123)		-0.073 (0.125)		-0.093 (0.123)
Married Missing Dummy		0.453 (0.855)		0.067 (0.751)		0.575 (0.602)		1.664 (1.627)		0.846 (1.022)		0.694 (0.854)
Married × Republican		0.295+ (0.156)		0.161 (0.111)		0.111 (0.091)		-0.037 (0.183)		-0.016 (0.166)		0.008 (0.162)
Married Missing × Republican		-0.102 (1.136)		0.587 (0.954)		-0.181 (0.798)		0.000 (.)		-2.037 (1.564)		-1.497 (1.311)
Urban/Suburban		0.171 (0.124)		0.285* (0.107)		0.350* (0.086)		0.251 (0.175)		0.308* (0.128)		0.313* (0.123)
Urban/Suburban × Republican		0.251 (0.169)		0.173 (0.144)		0.114 (0.106)		0.074 (0.207)		0.022 (0.141)		0.001 (0.140)
Intercept	3.624* (0.104)	2.012* (0.272)	3.624* (0.104)	2.168* (0.284)	3.624* (0.104)	2.052* (0.271)	1.026* (0.076)	0.282 (0.317)	1.026* (0.076)	0.423 (0.289)	1.026* (0.076)	0.420 (0.282)

N	2602	2602	3788	3788	6037	6037	838	838	1231	1231	1287	1287
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Table E1: Full Regression Estimates of Table 2 (Continued)

Dependent Variable	(1) Pol. interest 9/22	(2) Pol. interest 9/22	(3) Pol. interest 9/22	(4) Pol. interest 9/22	(5) Pol. interest 9/22	(6) Pol. interest 9/22	(7) Attent. Index 9/22	(8) Attent. Index 9/22	(9) Attent. Index 9/22	(10) Attent. Index 9/22	(11) Attent. Index 9/22	(12) Attent. Index 9/22
Treatment Group Bandwidth	-9/28	-9/28	-10/05	-10/05	-10/19	-10/19	-9/28	-9/28	-10/05	-10/05	-10/19	-10/19
Covariates	Yes	No	Yes	No								
Treated	0.033* (0.013)	0.031* (0.011)	0.037* (0.012)	0.040* (0.011)	0.038* (0.010)	0.041* (0.009)	-0.004 (0.011)	-0.000 (0.010)	-0.006 (0.010)	-0.001 (0.008)	-0.006 (0.009)	-0.000 (0.008)
Republican	0.024* (0.012)	0.003 (0.063)	0.024* (0.012)	-0.020 (0.062)	0.024* (0.012)	0.011 (0.051)	0.033* (0.013)	0.147* (0.063)	0.033* (0.013)	0.060 (0.054)	0.033* (0.013)	0.065 (0.052)
Treated × Republican	-0.032+ (0.016)	-0.032* (0.015)	-0.029+ (0.016)	-0.031* (0.014)	-0.023+ (0.013)	-0.024* (0.012)	-0.046* (0.018)	-0.050* (0.018)	-0.052* (0.018)	-0.054* (0.015)	-0.051* (0.018)	-0.052* (0.016)
Primary Turnout		0.076* (0.014)		0.072* (0.012)		0.075* (0.010)		0.058* (0.013)		0.045* (0.012)		0.043* (0.011)
Primary Turnout × Republican		-0.029 (0.020)		-0.010 (0.016)		-0.022 (0.014)		-0.020 (0.020)		0.011 (0.017)		0.015 (0.016)
Turnout in 2006		0.063* (0.020)		0.046* (0.016)		0.043* (0.011)		0.007 (0.018)		0.012 (0.015)		0.012 (0.014)
Turnout in 2006 × Republican		0.011 (0.024)		0.009 (0.024)		0.017 (0.017)		0.023 (0.033)		0.017 (0.026)		0.017 (0.024)
Turnout in 2004		0.095* (0.024)		0.101* (0.017)		0.086* (0.013)		0.056* (0.017)		0.059* (0.011)		0.059* (0.011)
Turnout in 2004 × Republican		-0.009 (0.028)		0.012 (0.022)		0.011 (0.019)		-0.028 (0.035)		-0.011 (0.023)		-0.015 (0.022)
Age (36-55)		0.029 (0.018)		0.024 (0.019)		0.023 (0.014)		0.029 (0.023)		0.011 (0.019)		0.010 (0.018)
Age (56-)		0.045+ (0.023)		0.043* (0.019)		0.049* (0.016)		0.014 (0.026)		0.013 (0.021)		0.012 (0.020)
Age Missing Dummy		0.062 (0.080)		0.073 (0.065)		0.043 (0.048)		0.087 (0.094)		0.119* (0.053)		0.124* (0.047)
Age (36-55) × Republican		-0.010 (0.027)		-0.001 (0.029)		0.014 (0.022)		-0.033 (0.027)		-0.015 (0.022)		-0.018 (0.023)
Age (56-) × Republican		0.002 (0.033)		0.024 (0.029)		0.021 (0.024)		-0.028 (0.033)		-0.028 (0.026)		-0.031 (0.027)
Age Missing × Republican		-0.101 (0.108)		-0.082 (0.092)		-0.011 (0.069)		-0.159 (0.125)		-0.104 (0.080)		-0.127+ (0.069)
Female		-0.021+ (0.011)		-0.015 (0.010)		-0.016* (0.006)		-0.023+ (0.012)		-0.022* (0.009)		-0.022* (0.010)
Female × Republican		-0.012 (0.017)		-0.008 (0.014)		-0.005 (0.009)		-0.018 (0.019)		-0.007 (0.011)		-0.008 (0.012)
White		-0.020 (0.037)		-0.002 (0.032)		0.019 (0.019)		0.008 (0.031)		-0.000 (0.028)		-0.003 (0.026)
Race Missing Dummy		-0.008 (0.084)		0.008 (0.050)		0.001 (0.041)		0.123* (0.059)		0.063 (0.060)		0.063 (0.057)
White × Republican		0.025 (0.048)		0.007 (0.039)		-0.011 (0.031)		-0.058 (0.045)		-0.003 (0.036)		-0.001 (0.033)
Race Missing × Republican		-0.035 (0.115)		-0.039 (0.080)		-0.011 (0.064)		-0.093 (0.081)		0.014 (0.081)		-0.006 (0.076)
Black		0.036 (0.035)		0.053+ (0.029)		0.079* (0.019)		0.055 (0.040)		0.048 (0.035)		0.043 (0.033)
Black × Republican		0.005 (0.070)		0.002 (0.051)		-0.004 (0.039)		-0.018 (0.057)		0.026 (0.043)		0.029 (0.040)
College		0.060* (0.014)		0.062* (0.010)		0.064* (0.007)		0.070* (0.014)		0.069* (0.010)		0.072* (0.010)
College Missing Dummy		0.201* (0.039)		0.128* (0.059)		0.058 (0.059)		-0.034 (0.052)		0.051 (0.058)		0.050 (0.048)
College × Republican		-0.030 (0.018)		-0.033* (0.014)		-0.030* (0.010)		-0.052* (0.023)		-0.052* (0.018)		-0.052* (0.017)
College Missing × Republican		-0.245* (0.086)		-0.162* (0.080)		-0.028 (0.080)		-0.194+ (0.108)		-0.198 (0.119)		-0.189+ (0.110)
Employed		-0.008 (0.011)		-0.003 (0.009)		0.002 (0.007)		-0.019 (0.016)		-0.009 (0.015)		-0.009 (0.014)
Employed Missing Dummy		-0.243* (0.082)		-0.107 (0.092)		-0.010 (0.051)		-0.239* (0.060)		-0.242* (0.069)		-0.234* (0.055)
Employed × Republican		-0.013 (0.018)		-0.012 (0.016)		-0.011 (0.010)		0.010 (0.018)		-0.001 (0.020)		-0.002 (0.019)
Employed Missing × Republican		0.215* (0.102)		0.110 (0.120)		-0.018 (0.077)		0.052 (0.056)		0.185+ (0.109)		0.173+ (0.093)
Married		-0.010 (0.010)		-0.007 (0.009)		-0.000 (0.008)		-0.009 (0.011)		-0.007 (0.012)		-0.008 (0.011)
Married Missing Dummy		0.013 (0.097)		-0.044 (0.094)		-0.026 (0.068)		0.169 (0.151)		0.077 (0.119)		0.065 (0.096)
Married × Republican		0.020 (0.014)		0.029* (0.013)		0.022* (0.010)		0.024 (0.016)		0.026 (0.017)		0.025 (0.017)
Married Missing × Republican		-0.017 (0.155)		0.036 (0.144)		-0.017 (0.092)		0.000 (.)		-0.093 (0.175)		-0.076 (0.153)
Urban/Suburban		0.000 (0.018)		0.010 (0.016)		0.023+ (0.012)		0.036* (0.016)		0.047* (0.014)		0.047* (0.013)
Urban/Suburban × Republican		0.039 (0.024)		0.026 (0.022)		0.003 (0.014)		0.016 (0.025)		0.004 (0.020)		0.003 (0.021)
Intercept	0.769*	0.574*	0.769*	0.554*	0.769*	0.527*	0.399*	0.236*	0.399*	0.241*	0.399*	0.244*

	(0.010)	(0.038)	(0.010)	(0.036)	(0.010)	(0.030)	(0.009)	(0.036)	(0.009)	(0.034)	(0.009)	(0.033)
N	3235	3235	4746	4746	7531	7531	838	838	1231	1231	1287	1287

Table E2: Robustness Check for Table 2 (Control Group Bandwidth = 5 Days)

Treated Group Bandwidth		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		News Exposure (# of Sources)		Social Media (# of Activities)		Follow Campaign (1 = Very Closely)		Attentiveness Index (1 = Highest)	
9/22 - 9/28	Treated (β_1)	0.031 (0.103)	0.028 (0.095)	-0.065 (0.100)	-0.020 (0.109)	0.036* (0.016)	0.035* (0.013)	0.004 (0.012)	0.009 (0.011)
	Treated \times Rep (β_3)	-0.097 (0.179)	-0.100 (0.181)	-0.471* (0.157)	-0.536* (0.171)	-0.029 (0.019)	-0.031+ (0.018)	-0.060* (0.020)	-0.063* (0.020)
	Observations	2203	2203	704	704	2740	2740	704	704
9/22 - 10/5	Treated (β_1)	0.129 (0.112)	0.152 (0.098)	-0.099 (0.109)	-0.064 (0.109)	0.039* (0.014)	0.043* (0.013)	0.002 (0.011)	0.007 (0.009)
	Treated \times Rep (β_3)	-0.304 (0.187)	-0.305+ (0.170)	-0.513* (0.146)	-0.547* (0.146)	-0.027 (0.018)	-0.030+ (0.015)	-0.066* (0.020)	-0.067* (0.018)
	Observations	3389	3389	1097	1097	4251	4251	1097	1097
9/22 - 10/19	Treated (β_1)	0.154 (0.102)	0.179* (0.089)	-0.096 (0.108)	-0.063 (0.109)	0.040* (0.012)	0.044* (0.011)	0.002 (0.010)	0.008 (0.008)
	Treated \times Rep (β_3)	-0.317+ (0.162)	-0.298* (0.145)	-0.496* (0.145)	-0.531* (0.147)	-0.020 (0.016)	-0.023+ (0.014)	-0.065* (0.020)	-0.066* (0.018)
	Observations	5638	5638	1153	1153	7036	7036	1153	1153
	DV Range	0-17	0-17	0-5	0-5	0-1	0-1	0-1	0-1
	Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Note. This table examines the robustness of Table 2 using a narrower time window for the control group. The control group bandwidth is 9/10-9/14 for all models. Other specifications are the same as Table 2. The point estimates are similar to Table 2. * $p < 0.05$.

Table E3: Robustness Check for Table 2 (Control Group Bandwidth = 10 Days)

Treated Group Bandwidth		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		News Exposure (# of Sources)		Social Media (# of Activities)		Follow Campaign (1 = Very Closely)		Attentiveness Index (1 = Highest)	
9/22 - 9/28	Treated (β_1)	-0.068 (0.084)	-0.074 (0.079)	-0.076 (0.082)	-0.042 (0.093)	0.040* (0.014)	0.037* (0.013)	-0.005 (0.011)	0.000 (0.010)
	Treated \times Rep (β_3)	-0.048 (0.139)	-0.031 (0.141)	-0.284* (0.132)	-0.304* (0.147)	-0.038* (0.015)	-0.036* (0.013)	-0.038* (0.017)	-0.039* (0.016)
	Observations	3158	3158	1007	1007	3944	3944	1007	1007
9/22 - 10/5	Treated (β_1)	0.031 (0.087)	0.059 (0.079)	-0.110 (0.091)	-0.078 (0.094)	0.044* (0.013)	0.046* (0.012)	-0.006 (0.010)	0.000 (0.008)
	Treated \times Rep (β_3)	-0.254+ (0.131)	-0.243* (0.118)	-0.326* (0.129)	-0.331* (0.131)	-0.036* (0.014)	-0.036* (0.012)	-0.044* (0.017)	-0.045* (0.014)
	Observations	4344	4344	1400	1400	5455	5455	1400	1400
9/22 - 10/19	Treated (β_1)	0.056 (0.075)	0.082 (0.065)	-0.107 (0.093)	-0.074 (0.096)	0.045* (0.010)	0.047* (0.010)	-0.006 (0.010)	0.001 (0.008)
	Treated \times Rep (β_3)	-0.268* (0.112)	-0.234* (0.100)	-0.309* (0.131)	-0.314* (0.133)	-0.029* (0.012)	-0.029* (0.010)	-0.042* (0.018)	-0.043* (0.014)
	Observations	6593	6593	1456	1456	8240	8240	1456	1456
	DV Range	0-17	0-17	0-5	0-5	0-1	0-1	0-1	0-1
	Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Note. This table examines the robustness of Table 2 using a broader time window for the control group. The control group bandwidth is 9/5-9/14 for all models. Other specifications are the same as Table 2. The point estimates are similar to Table 2. * $p < 0.05$.