

The Social Consequences of Political Anger

Steven W. Webster, Indiana University
Elizabeth C. Connors, University of South Carolina
Betsy Sinclair, Washington University in St. Louis

A functioning democracy relies on social interactions between people who disagree—including listening to others' viewpoints, having political discussions, and finding political compromise. Yet social life in the contemporary United States is characterized by a relative lack of interaction between Democrats and Republicans (or, social polarization). We argue that political anger contributes to social polarization by causing Americans to cut off ties with opposing partisans. We first draw on data from the American National Election Studies and the Wesleyan Media Project to show that the mass public is increasingly angry and that politicians often seek to elicit anger. We then present results from a survey experiment on nearly 3,500 Americans, finding that the exogenous introduction of anger leads partisans to socially polarize across a range of settings. Our findings suggest that increasing levels of political anger paralyze politics and harm democracy by influencing Americans' social interactions and relationships.

Debate and disagreement are central to the political enterprise. Indeed, a functioning democracy relies on social interactions between people who disagree. By engaging in such interactions and listening to others' viewpoints in the context of heterogeneous political discussion networks, citizens become more tolerant of those with whom they disagree (Kalla and Broockman 2020; Levendusky and Stecula 2021; Mutz 2002, 2006) and adopt more moderate political views (Klar 2014). However, despite their importance to the proper working of the democratic process, contemporary political discussion networks are rarely heterogeneous. In fact, those on opposite political sides are unlikely to even have friendly social interactions, let alone fruitful political discussions, with each other. Today, Democrats and Republicans dislike each other and are socially polarized to unprecedented degrees: partisans discriminate against opposing partisans in terms of where they want to live, with whom they want to be friends, and whom they want their children to marry. This partisan-based discrimination exceeds discrimination based on race (Iyengar and Westwood 2015) and exists even when Democrats and Republicans agree on issues (Mason 2015).

Though much of this antipathy is attributable to partisanship's increasing importance as a social identity (e.g., Iyengar, Sood, and Lelkes 2012; Iyengar and Westwood 2015; Mason 2015, 2018), we argue that anger among the mass public—which is often stoked by politicians—is an important and overlooked cause of Americans' tendency to engage in patterns of behavior that increase social polarization and exacerbate partisan divides. Drawing on a survey experiment of nearly 3,500 Americans that exogenously varies levels of anger, we show that when people are politically angry, they are less likely to create new social ties and are more likely to cut off current social ties with out-partisans. These results suggest that political anger—specifically, anger at the opposing party—causes people to base their social relationships (or lack thereof) on partisan politics, producing an America where Democrats and Republicans go to great lengths to avoid social interactions with those whose political leanings differ from their own.

Importantly, we show that anger causes Democrats and Republicans to engage in social polarization across a wide range of areas. For example, our results indicate that angry partisans are more likely than non-angry partisans to become

Steven W. Webster (swwebste@iu.edu) is assistant professor of political science at Indiana University–Bloomington, Bloomington, IN 47405. Elizabeth C. Connors (connors4@mailbox.sc.edu) is assistant professor of political science at the University of South Carolina, Columbia, SC 29208. Betsy Sinclair (bsinclair@wustl.edu) is professor of political science at Washington University in St. Louis, St. Louis, MO 63130.

The experiment in this study was conducted in compliance with all relevant laws and was approved by the institutional review board at Washington University in St. Louis. Replication files are available in the *JOP* Dataverse (<https://dataverse.harvard.edu/dataverse/jop>). The empirical analysis has been successfully replicated by the *JOP* replication analyst. An appendix with supplementary material is available at <https://doi.org/10.1086/718979>.

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socially polarized in relatively trivial ways: refusing to help an out-partisan neighbor; avoiding a conversation with an out-partisan at a social event; rejecting an invitation to have coffee, a drink, or a meal with an out-partisan; not joining a club with out-partisan members; and not going on a date with an out-partisan. Further, though, our findings show that anger causes individuals to become socially polarized in more costly ways: ending a close friendship with an out-partisan, attenuating ties with a close family member who is an out-partisan, and, finally, disapproving of one's son or daughter marrying an out-partisan. These results suggest that anger drives decisions about various aspects of one's social life—making these decisions increasingly based on partisanship and, therefore, contributing to polarization.

We also draw on a sentiment analysis and a series of instrumental variable regressions to provide evidence that we were successful in eliciting anger among our survey respondents in the treatment group and to further demonstrate that anger is the mechanism driving the social polarization effects—the most politically angry individuals adopt the most socially polarized behavioral intentions. Moreover, because anger has been shown to have an important gender and racial component (Phoenix 2019; Traister 2018), we examine whether the treatment effects we present vary according to respondents' gender or racial identity. We find that while in some cases the effect of political anger on social polarization is moderated by gender or race, in most cases the effect of political anger on social polarization is moderated by neither gender nor race. Finally, we draw on a measure of “self-monitoring”—a trait that captures one's tendency to misrepresent one's self to appease others (Berinsky 2004; Berinsky and Lavine 2011; Gangestad and Snyder 2000)—to demonstrate that our experimental findings are not the result of strategic answering on the part of survey respondents. Overall, we find that political anger causes Americans to socially polarize—and nearly uniformly so.

These results build upon and expand our understanding of partisan antipathy in contemporary American politics in a few ways. First, while previous studies have examined how secular trends in social sorting can lead to anger and antipathy (Mason 2018), we show that the opposite causal mechanism is also at work: across a range of settings, we find that anger produces social polarization, leading to a situation in which American politics can be characterized as a vicious cycle of social polarization, social sorting, and anger. Such a dynamic is likely to proscribe the type of engagements that could serve to reduce group-based tensions (Allport 1954). Second, while previous work has shown that anger mediates the relationship between partisanship and political participation (Groenendyk and Banks 2014), we show that the effect of anger on political attitudes extends beyond the realm of political-specific ac-

tivities like donating to a campaign or attending a rally. Third, and related, we build on prior work that links anger to a lack of deliberation and an unwillingness to compromise over political issues (MacKuen et al. 2010) by illustrating the corrosive effect of anger on Americans' willingness to associate and socially engage with those with whom they disagree politically.

This article proceeds as follows: first, we outline recent work on partisan antipathy in the United States and build a theory as to why anger should cause individuals to engage in patterns of behavior that exacerbate social polarization. We then use data from the American National Election Studies (ANES) and the Wesleyan Media Project to document the increasing levels of anger among the public as well as the increasing number of solicitations of anger by politicians. Next we explicate our experimental design before showing a series of results consistent with the expectation that political anger causes social polarization. Finally, we conclude with some thoughts about the implications of our results for the future of American politics.

SOCIAL POLARIZATION IN AMERICAN POLITICS

Americans are politically divided. While previous political eras have seen bipartisan cooperation and a considerable amount of split-ticket voting, the modern era is defined by partisan loyalty (Jacobson 2015), increased ideological thinking typical of the “new partisan voter” (Bafumi and Shapiro 2009), high levels of partisan sorting (Levendusky 2009), and a growing dislike between Democrats and Republicans (Iyengar and Westwood 2015; Mason 2018). This schism between supporters of the two major political parties is so great that a recent study by the Pew Research Center found that Democrats and Republicans increasingly view supporters of the opposing party as “closed-minded,” “unpatriotic,” “immoral,” and “lazy” (Pew Research Center 2019). Such attribution of negative stereotypes to out-partisans has led to social distancing from—and deliberate attempts to minimize interactions with—supporters of the opposing party (see, e.g., Chen and Rohla 2018).

What is perhaps most striking about the degree of social polarization in American politics is that its effects extend beyond the political arena. Indeed, Americans increasingly discriminate against each other based on partisan identities in domains that are inherently apolitical. Iyengar and Westwood (2015), for instance, find that individuals are more willing to award a scholarship to a hypothetical individual when the applicant and the awardee share the same partisan identification. These results persist even when the out-partisan applicant is noted as being more qualified than the in-partisan applicant. Remarkably, Iyengar and Westwood (2015, 701) note that “discrimination based on party affiliation exceeds discrimination based on race.”

Related work has found that these patterns of discriminatory behavior exist in more explicitly economic realms as well. Engelhardt and Utych (2020) use a survey experiment to show that Democrats and Republicans prefer to sell football tickets to copartisans, and that they offer a lower selling price for copartisans than they do for out-partisans. This finding corroborates other work, which finds that individuals prefer to work for copartisans and consumers prefer to purchase goods and services from copartisans (McConnell et al. 2018; Panagopoulos et al. 2019). These politically rooted economic biases are also found in online marketplaces. Indeed, scholars have shown that people prefer to buy goods on eBay from individuals whom they perceive as sharing their own political and cultural tastes (Elfenbein, Fisman, and McManus 2019).

Additionally, Americans are less willing to engage in social interactions with out-party supporters (Settle and Carlson 2019), and, when they do, these discussions are shorter in duration than those with copartisans (Frimer and Skitka 2020). In a related manner, individuals today are less willing to date out-partisans (Easton and Holbein 2020; Huber and Malhotra 2017). Collectively, this suggests that Americans increasingly view their social interactions—and potential social interactions—in partisan terms.

While these previous studies have all illustrated the ways in which partisanship affects how Americans interact with each other, their findings are all attributable to the effect of partisan identity on social polarization. Partisanship likely acts as a heuristic through which individuals infer characteristics about others and, accordingly, produces behavioral biases. Yet partisan identity cannot be the full story, as social polarization is not perfectly predicted by the strength of partisan identity. Thus, to more fully understand why social polarization has reached the levels we see today, we ask if political anger (specifically, anger directed toward partisan others) contributes to social polarization. Below, we explain why we expect this to be the case.

WHY SHOULD POLITICAL ANGER INFLUENCE SOCIAL POLARIZATION?

Political scientists and social psychologists have long known the power of emotions and their ability to shape individual- and group-level behavior (Banks 2016; Phoenix 2019; Valentino et al. 2011). Anger, in particular, has been shown to greatly affect behavior and judgment. When people are angry they are more likely to rely on simple heuristics and stereotypes when evaluating people, places, or objects (Bodenhausen, Sheppard, and Kramer 1994). Moreover, because it is an emotion with a negative valence (Moons, Eisenebrger, and Taylor 2010; Schwarz and Clore 1983), individuals who are

angry tend to evaluate items in a negative fashion (Bower 1991).

In addition to altering individuals' judgments, behaviors, and perceptions, anger pushes those who are experiencing it toward some action or set of actions that are meant to alleviate their frustration. Averill's (1982) work in this area shows that anger is oftentimes directed at some specific target. Indeed, Averill (1982, 166) notes that "the typical episode of anger involves an attribution of responsibility [or] an accusation . . . that the target [of one's anger] has done something wrong." Because anger involves an attribution of blame and a desire to alleviate one's irritation or frustration, individuals who are angry often take action against that which elicited their anger—be it a person, group of people, or some institution (Allred 1999).

In terms of politics, then, anger at the opposing party should cause individuals to want to take an action or set of actions against the opposing party. The most natural expectation is that individuals who are angry with the opposing party should be most likely to vote for their own party or, more negatively, against the opposing party (see, e.g., Abramowitz and Webster 2016). However, emotions are not easily compartmentalized. In fact, experiencing an emotion—such as anger—in one setting can, and oftentimes does, spill over to other areas of one's life (Forgas and Moylan 1987). Schwarz and Clore (1983), for instance, found that individuals reported greater well-being and life satisfaction on sunny days than rainy days. Such a finding is similar to that of Bodenhausen et al. (1994, 47), whose analyses of social judgments found that anger "translate[s] into a more negative appraisal of the target to be judged" even when one's anger is "sufficiently diffuse."

Emotions, then, can alter evaluations and judgments of events even when the emotion one is experiencing was aroused through a process or stimulus orthogonal to the object being evaluated. This is due, in part, to the fact that emotions contain either a positive or negative valence, and the direction of this valence shapes the evaluations that one renders (Bower 1981, 1991). Thus, because it is an emotion with a negative valence, anger—regardless of the setting in which it is elicited—can cause people to lower their evaluations or judgments of people or groups (see also Dunn and Schweitzer 2005). However, this does not imply that other negatively valenced emotions (such as anxiety or sadness) should also cause social polarization to a similar degree. While these other emotions may engender some amount of social polarization, the behavioral consequences of these emotions—such as information seeking for anxiety—are generally at odds with behavior that puts social distance between oneself and those with whom one disagrees politically. Anger, by contrast, is an action-oriented emotion

(Allred 1999). Accordingly, it is its negative valence, combined with its tendency to cause individuals to take an action or set of actions against that which elicited their anger, that makes anger unique in its ability to produce social polarization.

Drawing on these behavioral implications of anger, we expect that those who are made angry at the opposing political party will engage in social behavior that extends beyond actions normally undertaken in the political realm in an attempt to both alleviate their frustration and exact retribution on the source of their anger. Indeed, we expect anger to cause individuals to take some social action or set of actions against that which most readily and visibly represents the opposing party: its supporters. More specifically, we expect that anger will cause individuals to take a series of actions across a multitude of domains that, as a whole, will serve to increase social polarization between Democrats and Republicans. These actions—among others—include refusing to assist out-partisan neighbors with various tasks, declining to speak with supporters of the opposing party, opting against having coffee or a meal with an out-partisan, avoiding social gatherings or clubs that are heavily attended by opposing partisans, refusing first date requests with out-partisans, being disappointed if one's son or daughter decides to marry a supporter of the opposing party, and even severing close friendships with out-partisans and distancing one's self from close family members who support the opposing party.

Understanding whether and how political anger affects apolitical social behavior is not merely an intellectual curiosity. On the contrary, understanding the full effects of anger in the contemporary era could not be more important. Indeed, data from Gallup indicate that Americans are increasingly experiencing anger in their daily lives: as of 2018, 22% of Americans reported that they “experienced anger yesterday.” This figure represents an increase of nearly 30% from 2017.¹

Though the anger measured by Gallup deals with issues that extend beyond politics, observational data suggest that Americans are also angry specifically with out-partisan political figures (what we refer to as “political anger”). Though not uniformly so, Americans' anger with political figures has increased over time. Drawing on data from the American National Election Studies (ANES) cumulative data file, figure 1 plots the percentage of Americans who reported ever feeling angry at the opposing party's presidential candidate for the period spanning from 1980 to 2016.² In 1980, when the

ANES first began to track anger toward the parties' presidential candidates, just under 50% of respondents reported feeling angry toward the out-partisan presidential candidate. By 2004, 65.9% of respondents felt angry toward the opposing party's presidential candidate. This measure soared in 2016, with just under 90% of respondents indicating that they were angry with the opposing party's presidential candidate.

However, despite the secular increase in anger among the mass public shown in figure 1, it is clear that this increase has not been monotonic. On the contrary, in some electoral cycles—such as 1984, 2004, or 2016—anger appears to be a particularly salient feature of political competition. In other years—such as 1988 or 2000—mass-level anger is less pronounced. Though there are many reasons why anger may be more or less salient in a given electoral cycle, a significant proportion of mass-level anger is likely attributable to deliberate actions undertaken by political figures. Indeed, political elites may seek to arouse anger because it can be useful for their own electoral pursuits (Freeman 2018; Webster 2020). One such action is the production of anger-inducing campaign advertisements. An analysis of presidential, House, Senate, and gubernatorial campaign advertisement data from the Wesleyan Media Project—shown in table 1—suggests that approximately 50% of all campaign advertisements that aired during each of the 2010, 2012, 2014, and 2016 election cycles sought to appeal to voter anger to varying degrees.³ Because citizens tend to mimic the anger that they see displayed by political elites (Gervais 2017) and because around half of all campaign advertisements that have aired in the modern era have sought to elicit anger among the mass public, attentive citizens have plenty of opportunities to be exposed to anger-inducing political stimuli.

Anger, then, is an emotion that is commonly expressed by the mass public. However, the public is neither perpetually nor uniformly angry. On the contrary, the degree to which Americans express political anger varies across electoral cycles. This variation occurs—at least partially—due to differences in elites' attempts to arouse their base and citizens' attentiveness to such appeals.⁴ Understanding how these

1. The full Gallup report can be found at <https://news.gallup.com/poll/249098/americans-stress-worry-anger-intensified-2018.aspx>.

2. For self-identifying Democrats, this measure captures whether or not the respondent ever felt angry toward the Republican Party's presidential candidate. For self-identifying Republicans, this measure captures

whether or not the respondent ever felt angry toward the Democratic Party's presidential candidate. Those who self-identified as independents who lean toward one of the two parties are classified as partisans.

3. We are limited to these years because the Wesleyan Media Project did not begin tracking appeals to anger in campaign advertisements until the 2010 election. Note that, due to contractual agreements, the 2016 data do not contain presidential advertisements (they do, however, include Senate, House, and gubernatorial elections). For more information on the Wesleyan Media Project, see <http://mediaproject.wesleyan.edu/>.

4. Other sources of variation in mass-level anger include media exposure, world events, and the state of the economy.

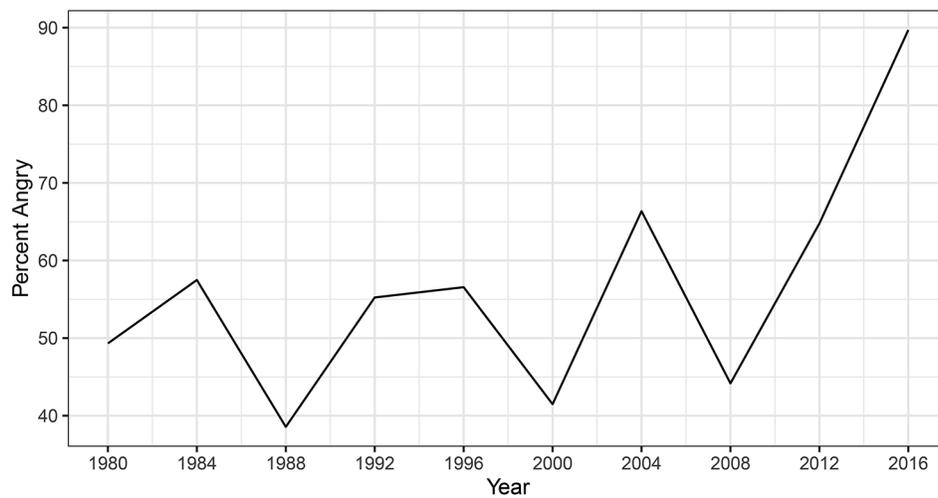


Figure 1. Anger toward the out-party presidential candidate. This figure shows the percentage of Americans who reported that they felt angry with the opposing party's presidential candidate for the period from 1980 to 2016. Data come from the ANES cumulative data file.

varying levels of mass-level political anger spill over to affect social considerations is the task to which we now turn.

EXPERIMENTAL DESIGN

To examine how anger affects social polarization, we fielded a survey experiment via the Lucid Fulcrum Academic platform in winter 2020.⁵ Our experiment comprised 3,416 respondents who identified with either the Democratic or Republican Party.⁶ The demographic and partisan profiles of Lucid users compare favorably to those found in the ANES (for more on Lucid, see Coppock and McClellan [2019]). Summary statistics for our sample can be found in table B.1.

Before the experimental manipulation, we asked survey respondents a series of demographic questions—such as their birth year, gender, racial affiliation, and educational attainment. Respondents were also asked about their partisanship and ideological leanings, both on the standard 7-point scale. Additionally, we asked a set of questions to measure self-monitoring, a trait that captures one's tendency to misrepresent one's self to appease others (Berinsky 2004; Berinsky and Lavine 2011; Gangestad and Snyder 2000). As one's level of self-monitoring increases, the likelihood of changing one's

attitudes and behavior to present one's self well to others also increases (Berinsky 2004).⁷

After these questions, respondents were randomly presented with an anger-inducing stimulus. To elicit anger among survey respondents, we relied on an experimental technique known as “emotional recall.” Popular in psychology and increasingly used to study topics of interest to political science, this technique asks individuals to write about a time they experienced a given emotion (here, anger). By doing this, respondents will temporarily reexperience—or “recall”—how they felt during the recounted episode (see, e.g., Lerner and Keltner 2001). The specific prompt used in our study asked individuals to write about a time they were very angry with the opposing political party. The control group asked individuals to write about what they ate for breakfast in the morning. Asking individuals to describe what they ate for breakfast in the morning is a useful control condition because, compared to alternative prompts, it is more plausibly orthogonal to any emotional state. This aids our ability to make clean causal inferences, as an alternative control condition—such as thinking about the opposing political party—is likely to elicit some degree of anger (Webster 2018). By asking respondents who were randomized into the control group to write about what

5. Our survey was fielded to 4,126 respondents; however, because we are interested in the ways in which partisan anger affects social polarization, we dropped those individuals who identified as “completely independent” prior to the randomization stage.

6. Partisan affiliation is measured on the typical 7-point scale. Those who indicated that they are an independent but lean toward one of the two parties are classified as partisans.

7. Three questions constitute our measure of self-monitoring. The first question asks respondents how often they “put on a show” in order to impress or entertain others; the second question asks survey respondents to indicate how often they are “the center of attention” when they are with a group of people; and, finally, the third question asks individuals to rate how good or poor of an actor they would be. We then combine responses to each of these questions into an additive scale ranging from 0 to 12, where higher scores indicate a greater likelihood of engaging in self-monitoring. See Berinsky and Lavine (2011) for more details.

Table 1. Anger in Political Campaign Advertisements

Years	Some Anger	Strong Anger	Total Percentage
2010	27.59	21.09	48.68
2012	32.41	18.90	51.31
2014	35.85	14.30	50.15
2016	37.00	17.11	54.11

Note. This table shows the percentage of political campaign advertisements that made either “some appeals” to anger or “strong appeals” to anger from 2010 to 2016.

they ate for breakfast, we are more likely to obtain a true baseline from which to compare our treatment effects by avoiding giving ostensibly nontreated units a small dose of our anger treatment.

Because our experimental manipulation requires anger to be directed at the opposing political party, randomization into either the treatment or the control group occurred after first blocking on an individual’s self-identified partisanship. Thus, individuals who answered that they were either a “strong Democrat,” a “weak Democrat,” or an “independent who leans toward the Democratic Party” were asked to either write about a time they were very angry at the Republican Party or to describe what they ate for breakfast that morning. Analogously, survey respondents who identified as a “strong Republican,” a “weak Republican,” or an “independent who leans toward the Republican Party” were asked to write about a time they were very angry at the Democratic Party or to describe what they ate for breakfast that morning.⁸

Individuals who received the treatment prompt typically wrote about various political figures or policies supported by the opposing party that they found to be offensive. One Republican, for example, wrote the following:

I am extremely angry at the Democratic party right now! They are trying to take what our forefathers built on God and love of country and totally destroy it! They’re killing our babies in the womb! They are torturing our older generations by stopping physicians from prescribing pain medication that has worked for them for years. It is like a genocide. They are taking our freedom of speech and slowly eroding it.

8. It is possible that, because of the time in which our experiment was fielded, self-identifying Democrats were already “pretreated” with anger. However, to the extent this is the case, this would introduce bias against us finding any effect of manipulated anger on social polarization, at least for Democrats.

Similarly, a self-identifying Democrat who received the anger prompt wrote the following about Republicans:

I have been very angry with the Republican Party as a whole since 2016. I’ve never really aligned with the ideologies of conservatives, but I have seen this party completely disregard the constitution, decent morals, and the best interest in the American people. The biggest offense being preventing a hearing with witnesses for the recent impeachment inquiry for president Trump. Try holding a trial for an average person without allowing for witnesses to take the stand, it isn’t right. The blatant lack of regard for any part of the constitution is abhorrent. The Republican Party is a scam that only seeks out what’s in their best interest without any regard for what might be decent for the American people.

After being randomized into either the treatment or control, as described above, respondents were asked a series of questions designed to measure their behavior in various social settings with out-partisans. Specifically, respondents were asked to indicate how they would behave in a variety of situations involving a supporter of the opposing political party. In each case, this individual was described specifically as a Democrat (for those who indicated a Republican identification from our pretreatment questionnaire) or a Republican (for those who indicated a Democratic identification from our pretreatment questionnaire). Of course, this design and, thus, its findings, can apply only to situations in which people know (or at least assume) the other person’s partisanship. We do not think this diminishes the implications of our study, as most people can at least infer the partisan leanings of individuals in their immediate social circle. Moreover, such a concern is not problematic in this case because individuals were specifically told that each social interaction involved a supporter of the opposing party.

To begin, respondents were asked how often they would do each of the following activities for their out-partisan neighbor: do favors for him or her, watch over his or her property while they are not home or are on vacation, ask him or her about personal things, or talk to him or her about politics. Responses to each of these activities included “never,” “sometimes,” “about half the time,” “most of the time,” or “always.” We then recoded these variables to range from 0 to 4, where higher values indicate a more socially polarized response—that is, a lower frequency of doing each of the listed activities.

Additionally, we asked survey respondents what they would do if they were at a party or social gathering and learned that the person they were talking to was a supporter of the

opposing party. Responses range from “continue talking to them, including about politics” to “attack their political views.” Respondents could also indicate that they would “continue talking to them, but not about politics,” “try to find a polite way out of the conversation,” or “leave the conversation without worrying about being polite.” As before, we recoded this variable to a numeric scale ranging from 0 to 4, where higher values indicate a more aggressive approach (e.g., “attack their political views”).

Similarly, we asked survey respondents what they would do if there was a social gathering or party that they would normally go to or join but new information suggested that it would be mostly members of the opposing party in attendance. We also asked what respondents would do if a member of the opposing party asked them to have coffee, a drink, or a meal. In a similar vein, we asked whether respondents would go on a first date with a member of the opposing party if asked. Each of these questions has responses ranging from “certainly go” to “say no and talk badly about” the other person. Each of these measures was coded to range from 0 to 4, where higher values indicate a more socially polarized response.

We also asked survey respondents a series of questions about their relationships with their close family members and close friends. One question asked how survey respondents would react if they found out that a close family member was a supporter of the opposing party, while another asked this same question but in regard to a close friend. Responses ranged from “I would treat them the exact same” (or “change nothing about the friendship”) on the least socially polarizing end of the scale to “I would cut them out of my life as much as possible, and I would attack their political beliefs” (or “I would end the friendship”) on the most socially polarizing end. Respondents were also asked how comfortable they are having close personal friends who are supporters of the opposing party and how comfortable they are having neighbors on their street who are supporters of the opposing party. Both questions have possible responses ranging from “extremely uncomfortable” to “extremely comfortable” (see Iyengar and Westwood 2015).

We also asked respondents to answer three questions pertaining to romantic relationships. In one question, respondents were asked whether they would approve of the relationship if they found out that a close friend or family member was dating a supporter of the opposing party. A related question asked respondents how happy they would be if their friend, an in-party supporter, got a divorce from their spouse, an out-party supporter. The last question in this series asked respondents to indicate the extent to which they would be upset if their son or daughter was going to marry a supporter of the opposing party (see Iyengar and Westwood 2015).

Finally, we asked one question about “fake news.” Respondents were asked to imagine that they had just read a news article that was critical of the opposing party. However, respondents were told that this article was “deemed to be questionable in terms of its accuracy.” Despite this warning about the veracity of the article’s contents, respondents were asked how likely they would be to share it with friends or family members. Potential answers range from “extremely unlikely” to “extremely likely.” The full text, and response set, to this and all of our social polarization measures can be found in the appendix.

Because the assignment to the anger or control prompt was randomized conditional on an individual’s partisan identification, the average treatment effect (ATE) is estimated via standardization as follows:

$$E[Y|T = 1, P] - E[Y|T = 0, P], \quad (1)$$

where Y denotes one of the measures of social polarization described above, T denotes treatment status ($T = 1$ for treatment, $T = 0$ for control), and P represents an individual’s partisan affiliation. The conditional average treatment effects—that is, the treatment effect of anger on various measures of social polarization estimated separately for Democrats and Republicans—are presented in tables B.6–B.9.

THE EFFECT OF ANGER ON SOCIAL POLARIZATION

Average treatment effects

Before presenting the results of our experiment we first checked balance statistics for individuals who were randomized into the treatment and control conditions. We found that there are no statistically significant differences between the treated and control groups in terms of racial identity, ideological leanings, gender, educational attainment, or age. Moreover, this balance between treated and control units exists for both Democrats and Republicans. A balance plot illustrating the success of our randomization can be found in the appendix.

Next, we examine whether we were successful in manipulating anger among our respondents. To do so, we measure the percentage of angry words that respondents wrote in their emotional recall paragraphs according to the Linguistic Inquiry and Word Count (LIWC) dictionary. Because “language is the most common and reliable way for people to translate their internal thoughts and emotions into a form that others can understand,” we should expect those individuals who received the anger treatment to use more angry words than those who were randomized into the control group (Tausczik and Pennebaker 2010, 25). A regression analysis indicates that those individuals who received the treatment

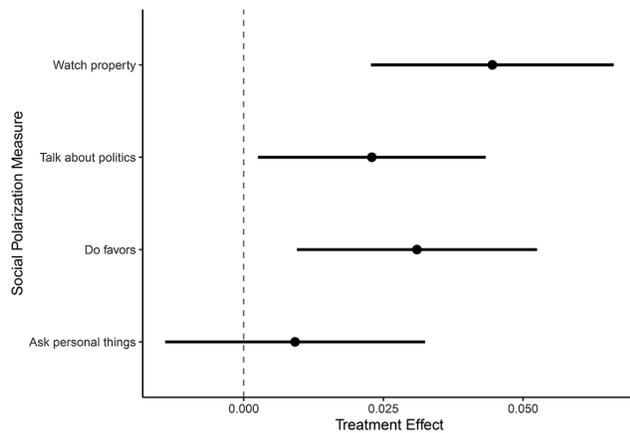


Figure 2. Anger and social polarization, neighbors. This figure shows the treatment effect of anger on various social polarization measures pertaining to interacting with one’s neighbor.

wrote 2.9% more angry words in their paragraphs than those who received the control prompt. This difference is statistically significant at the $p < .001$ level, suggesting that we were successful in manipulating respondents’ anger.

Because our treated and control units are balanced on observable covariates, and because we were successful in manipulating respondents’ anger, we estimate the effect of political anger on social polarization as shown in equation (1). The treatment effects for each of the measures of social polarization we examined are shown in figures 2 and 3. To facilitate an easier comparison of the various treatment effects, each of our dependent variables has been rescaled to range from 0 to 1. Regression tables containing the treatment effect of anger for each measure of social polarization can be found in tables B.2 and B.3. Regression tables containing the treatment effects of anger on social polarization without a rescaling of the dependent variables can also be found in tables B.4 and B.5. In no case does the relationship between anger and social polarization change due to our rescaling of the dependent variables.

The first set of results displayed in figure 2 shows how anger affects the frequency with which individuals are willing to engage in activities for their out-partisan neighbor. The first coefficient shows the treatment effect of anger on individuals’ willingness to watch over their out-party neighbor’s property when they are not home or are on vacation. The second coefficient shows the effect of anger on one’s willingness to talk about politics with an out-partisan neighbor. The third coefficient shows the effect of anger on individuals’ willingness to do favors for an out-partisan neighbor, while the fourth coefficient shows the effect of anger on individuals’ willingness to ask their out-partisan neighbor about personal things. Each treatment effect is shown with 95% confidence intervals. In

each case, a positive treatment effect indicates a more socially polarized response (i.e., a greater likelihood of not engaging in these activities with or for one’s out-partisan neighbor).

As can be seen, anger causes individuals to be less likely to engage with their out-partisan neighbor in three out of the four scenarios that we measured. Indeed, anger causes individuals to be less willing to watch over their neighbor’s property when they are not home or are on vacation. Anger also causes individuals to be less willing to talk about politics with their out-partisan neighbor and to do favors for him or her. There is no effect of anger on one’s willingness to ask their out-partisan neighbor about personal things. Anger’s ability to affect these sorts of reported behaviors with neighbors is rather surprising. Indeed, because they are likely to come into frequent contact with each other, neighbors have ample opportunities to form bonds of mutual trust and understanding (Allport 1954). That anger causes individuals to report being less socially charitable with their neighbors, then, suggests that it has the ability to broadly and powerfully shape social polarization.

To better understand just how broad of a role anger plays in engendering social polarization, we next present a series of results that show the causal effect of anger on 12 additional measures of social behavior. As with the results shown in figure 2, the results we present here are once again standardized such that each dependent variable ranges from 0 to 1. In each case, higher values indicate a more socially polarized reaction to the behavior measured. The treatment effects of anger, with associated 95% confidence intervals, on these measures of social polarization are shown in figure 3.

The treatment effects shown in figure 3 illustrate how powerful anger is in shaping social polarization. As shown

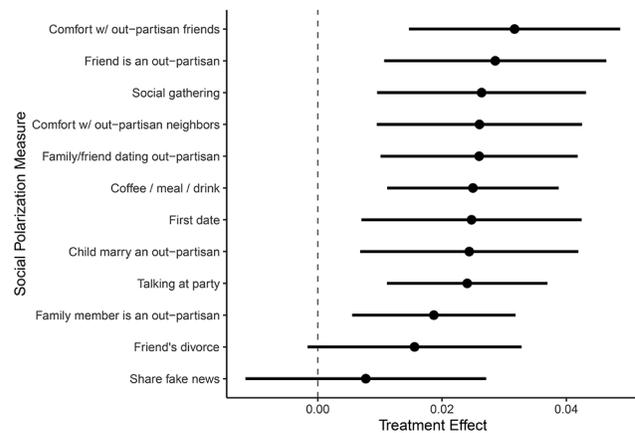


Figure 3. The effect of anger on social polarization. This figure shows the treatment effect of anger on various forms of social polarization. In nearly every instance, anger causes individuals to adopt a more socially polarized response.

in figure 3, anger at the opposing party causes individuals to adopt socially polarized responses across a myriad of dimensions. Among other things, anger causes individuals to engage in social polarization when talking with an out-partisan supporter; when considering whether to accept an offer to have coffee, a meal, or a drink with an out-partisan supporter; when deciding whether to accept an invitation to go on a date with an out-partisan supporter; when thinking about whether to attend a social gathering or club that is likely to be heavily populated by supporters of the opposing party; and when pondering the ramifications of a child marrying a supporter of the opposing party. Indeed, in all but two measures—sharing news that is critical of the opposing party but that has been deemed to be “questionable” in terms of veracity and being happy about a friend’s divorce from a supporter of the opposing party—anger causes individuals to adopt more socially polarized responses.

What is perhaps most striking about these results is that they persist across issues that vary in terms of their social costs. For instance, it is relatively easy to avoid going to a social gathering or club that is likely to be heavily attended by supporters of the opposing party. Similarly, it is not too difficult to end a conversation with someone at a party. On the other hand, it is significantly more costly to distance one’s self from a close friend or close family member for either being a supporter of the opposing political party or even dating a supporter of the opposing political party. It is also costly to express disapproval of a child’s decision to marry a supporter of the opposing party based only on this political consideration. That anger causes individuals to engage in socially polarizing actions across a range of scenarios—beyond what already exists in our current socially polarized environment—suggests that it is uniquely powerful in shaping mass-level behavior.

Additionally, these results are noteworthy for their substantive effect sizes. While an increase of approximately 3%–4% in our social polarization measures may appear small, these effects were obtained using an experimental technique that, compared to contemporaneous manipulations, should be expected to elicit a small degree of the targeted emotion. Indeed, asking someone to reflect on something about the opposing political party that made them angry is qualitatively different than experiencing a contemporaneous emotion. Moreover, because emotional states tend to fade over time (especially when the emotional manipulation is not particularly strong), the fact that we still find effect sizes as large as we do is impressive (see, e.g., Verduyn et al. 2009). Anger, then, is a powerful force shaping the ways in which Americans view supporters of the opposing political party in social settings.

The magnitude of anger and social polarization

The preceding analyses have shown, via a sentiment analysis using the LIWC dictionary, that we were successful at eliciting anger among those respondents who were randomized into our treatment group. We have also shown in figures 2 and 3 that randomization into the treatment caused respondents to socially polarize across a range of settings. However, one potential concern is that, even though we were successful at eliciting anger among our treated units, the mechanism driving the causal effects presented above might be something other than individuals’ levels of anger. Indeed, because emotions of a similar valence tend to co-occur (Albertson and Gadarian 2016), our experiment almost certainly elicited some amount of anxiety and sadness along with the target emotion of anger.

To address this concern, we once again rely on our LIWC-based sentiment analysis of the text that individuals wrote in their emotional recall responses. To begin, we note that it is empirically true that our experimental manipulation elicited trace amounts of related negatively valenced emotions, such as anxiety and sadness. However, it is clear that our manipulation overwhelmingly primed anger in our survey respondents and very little of these other emotions. After calculating the mean percentage of angry, anxious, and sad words that respondents used according to treatment status, we found that our experiment worked as intended. Those who were randomized into the treatment condition used over 33 times the amount of angry words in their emotional recall responses compared to the control group. By contrast, our treatment group used only three times the amount of anxiety-related words and less than two times the amount of sad-related words compared to the control. This suggests that our treatment worked as intended: what we overwhelmingly manipulated in our survey respondents was, in fact, anger. A complete breakdown of the mean percentage of negatively valenced words used by respondents in the treatment and control groups can be found in the appendix.

To further address the concern that some emotion other than anger might be driving our results, we adopt an instrumental variables approach, where our treatment assignment indicator acts as an instrument for the percentage of angry words that a respondent wrote in his or her emotional recall prompt. This approach estimates a complier-weighted local average treatment effect (LATE), where “compliance” refers to self-inducing anger. In addition to correcting for any non-compliance (e.g., treated respondents not self-inducing anger or self-inducing an emotion other than anger), our instrumental variables analysis sheds light on the relationship between the magnitude of anger one is experiencing and the degree to which they socially polarize. If anger is the mechanism behind

the results presented above, then we should find that those individuals who were induced by the instrument into using a greater percentage of angry words in their emotional recall stories should adopt the most socially polarized responses. If anger is not the mechanism driving our results, there should not be a relationship between the percentage of angry words used in emotional recall stories and respondents' stated behavioral preferences across our social measures.

Because we have already discussed above that the assignment to the treatment group was associated with a nearly 3% increase in the percentage of angry words used in respondents' emotional recall stories (and that this increase is statistically distinguishable from zero at the $p < .001$ level), below we present only the second-stage results from our instrumental variables regression. Thus, we estimate:

$$\text{Social Polarization}_i = \overbrace{\text{Pct. Angry Words}_i} + \text{Democrat}_i + \varepsilon_i, \quad (2)$$

where the dependent variable is one of our 16 measures of social polarization, and individual i 's assignment to the treatment or control condition serves as an instrument for the percentage of angry words that he or she wrote in their emotional recall story. Because randomization to treatment or control occurred separately among Democrats and Republicans, we include our dichotomous measure of partisanship in order to present average treatment effects via standardization. The results of the regressions estimated via equation (2) are shown in table 2.

The results in table 2 indicate that those individuals who were induced by the instrument (that is, by receiving our anger-eliciting treatment) into using a greater percentage of angry words in their emotional recall stories adopted the most socially polarized responses. Moreover, a test for weak instruments in each of these model specifications yields an average F -statistic of 799.95. Because F -statistics greater than 10 are believed to be indicative of a strong instrument, it is clear that ours is a strong instrument.⁹ The strength of our instruments is important, as strong instruments are significantly more robust to violations of the exclusion restriction. Collectively, this demonstrates that anger is the mechanism driving the results shown in figures 2 and 3. It also suggests that the angrier individuals are about politics, the more socially polarized they will become.

Robustness checks

To examine the reliability of our findings, we conducted a series of theoretically important robustness checks. First, one

9. The F -statistic associated with the weak instruments test for each of these instrumental variables regressions can be found in the appendix.

might wonder if the results from the anger treatment reflect distaste of politics and partisanship in general (i.e., partisan disdain; see Klar, Krupnikov, and Ryan 2018), rather than distaste of—and disengagement from—the other party specifically (i.e., social polarization). Our results suggest that this is not the case; if it were, we would see differential effects based on social choices that involved speaking to an out-partisan about politics versus social choices that did not. That is, we would see that the treatment would make people less likely to engage in social interactions that involved speaking with out-partisans but not less likely to want to engage in social interactions that did not involve speaking with out-partisans (e.g., watching an out-partisan neighbor's property when he or she is on vacation). However, this is not what we observe. In fact, anger has a stronger effect on causing individuals to not watch over an out-partisan neighbor's property than it does on not talking to an out-partisan neighbor about politics, although this difference is not statistically significant. Thus, it seems that social polarization, specifically, is influenced by anger. Moreover, the effect of anger on social polarization does not appear to be attenuated even when it is suggested that the participant will not have to interact with the out-partisan.

A second question about our results is whether they are survey artifacts or reflect more meaningful responses. It is possible, for example, that survey respondents are engaging in "cheap talk" by saying that they would engage in activities or behaviors that produce social polarization. Two findings suggest that this is not the case. First, if it were the case that people were simply engaging in cheap talk—saying they would engage in socially polarized behavior when they would not actually do so—we would not expect responses to differ based on the costliness of the activity. Instead, though, while we see our effects remain for many of the more costly behaviors (e.g., ending a close friendship with an out-partisan), we do see where people draw the line—anger does not make people, for example, more likely to say they would be happy about a friend's divorce from an out-partisan ($p = .076$), nor does it make people say they are more likely to share questionable fake news that hurts out-partisans ($p = .434$) or refrain from asking an out-partisan neighbor about personal things ($p = .439$). Instead, our results suggest that people are making distinctions between these actions. This pattern of answers would be unlikely if respondents were simply engaging in cheap talk.

Further, we make use of self-monitoring—a trait that measures the likelihood of adjusting one's self to impress others or to fit in (see Berinsky 2004)—to examine whether our results are attributable to cheap talk. While research often focuses on high self-monitors—those who are most likely to adjust themselves to impress others—low self-monitors

Table 2. The Magnitude of Anger and Social Polarization

	Do Favors	Watch Property	Ask Personal Items	Talk Politics	Talk at Party	Coffee/Meal/Drink	Gathering	First Date
Predicted % angry words	.011*** (.004)	.016*** (.004)	.003 (.004)	.008** (.004)	.009*** (.002)	.009*** (.002)	.009*** (.003)	.009*** (.003)
Democrat	.116*** (.011)	.116*** (.011)	.050*** (.012)	.031*** (.011)	.034*** (.007)	.048*** (.007)	.064*** (.009)	.066*** (.009)
Constant	.314*** (.010)	.204*** (.010)	.539*** (.011)	.697*** (.010)	.193*** (.006)	.098*** (.007)	.179*** (.008)	.163*** (.008)
N	3,410	3,406	3,408	3,403	3,278	3,408	3,410	3,411

	Family Date	Friend Out-partisan	Family Out-partisan	Friend Divorce	Friends (comfort)	Neighbors (comfort)	Marriage	Fake News
Predicted % angry words	.009*** (.003)	.010*** (.003)	.007*** (.002)	.005* (.003)	.011*** (.003)	.009*** (.003)	.009*** (.003)	.003 (.003)
Democrat	.038*** (.008)	.058*** (.009)	.048*** (.007)	.054*** (.009)	.082*** (.009)	.069*** (.009)	.047*** (.009)	-.031*** (.010)
Constant	.186*** (.008)	.192*** (.008)	.102*** (.006)	.262*** (.008)	.146*** (.008)	.138*** (.008)	.159*** (.008)	.344*** (.009)
N	3,408	3,398	3,410	3,412	3,413	3,410	3,409	3,414

Note. This table shows the relationship between the magnitude of anger (measured via the percentage of angry words individuals used in their emotional recall responses) and the degree of social polarization. These estimates are derived from a series of instrumental variables regressions.

* $p < .1$.
 ** $p < .05$.
 *** $p < .01$.

offer an interesting opportunity to validate survey responses. Those who are low in self-monitoring are motivated by “self-verification” and “authenticity” (Banaji and Prentice 1994; Gangestad and Snyder 2000; Premeaux and Bedeian 2003; Snyder 1974). Thus, in our context, low self-monitors should be reliable survey takers; they do not take surveys aiming to fit into what researchers or others want to hear. On the contrary, they want to express themselves authentically. Thus, when we ask how they would behave socially, their responses should be a fair representation of what they would actually do, rather than just what they think they are expected to do.

To see if our results differ by low and high self-monitors—which might suggest that high self-monitors are driving the results by engaging in cheap talk—we test whether there is an interaction between self-monitoring and the treatment. Whether self-monitoring is coded as continuous or as a median split (Berinsky 2004), we find no interaction effect. Similarly, subsetting the data and examining the treatment effect on low self-monitors—the “authentic” survey takers—produces the same pattern of results. This suggests that our anger treatment did not simply lead people to engage in cheap talk: those who pride themselves on their authenticity were

similarly more likely to report a greater likelihood of engaging in social polarization after being randomly assigned to the anger condition.

Because the most dedicated partisans are also the most biased, active, and angry partisans (Abramowitz 2010; Bafumi and Shapiro 2009), we also checked to see whether the average treatment effect of anger on social polarization varied as a function of respondents’ strength of partisanship or ideological extremity. In no case did we find a heterogeneous treatment effect that could be statistically distinguished from zero at $p < .05$.¹⁰ Tables containing these regressions can be found in the appendix.

Finally, we checked to see whether gender or race moderates the causal effect of anger on our various measures of social polarization. Examining these potential heterogeneous effects is important because previous works have shown that anger can operate differently for men and women, as well as for Whites and non-Whites (see, e.g., Banks 2016; Phoenix

10. In some cases the treatment itself became statistically indistinguishable from zero. However, this is likely due to a lack of power after breaking the data down into multiple subgroups.

2019; Traister 2018). Our results suggest that, for four of the 16 cases we studied, women translate their political anger into greater amounts of social polarization compared to men. Women express a greater willingness to end a relationship with a family member who is an out-partisan ($p < .05$), are more likely to be upset if a family member dates an out-partisan ($p < .05$), are less comfortable having a friend who supports the opposing party ($p < .01$), and are less comfortable having a neighbor who supports the out-party ($p < .01$). By contrast, non-White respondents are less likely to let their political anger cause them to be uncomfortable going on a first date with a supporter of the opposing party; similarly, non-White respondents are less likely to let their political anger cause them to be uncomfortable with a family member dating a supporter of the opposing party ($p < .05$). In no other cases—either for gender or race—were heterogeneous effects detectable at a level of $p < .05$ or lower. Because only four dependent variables measured for gender and two dependent variables measured for race—out of the 16 total measures for each—are significant, we are hesitant to make much of these findings. These results can be found in tables B.14–B.17.

CONCLUSION AND IMPLICATIONS

Anger oftentimes causes individuals to take an action or set of actions against that which made them angry (Allred 1999). While the set of actions one takes while angry is often related to the domain of that which made them angry, the results of this study indicate that political anger has consequences that extend beyond the political realm. Indeed, our results show that the retaliatory measures that one seeks to take when experiencing politically induced anger go beyond politically related actions. As we have shown, political anger has the ability to affect social interactions between Democrats and Republicans, driving social polarization to extend beyond what already exists.

An important aspect of these results is that they persist across a range of social settings. Political anger causes Democrats and Republicans to socially distance themselves from out-partisans in both “easy” and “hard” cases. Accordingly, we see that anger increases social polarization when it pertains to items like doing favors for a neighbor or talking about politics with a friend; we also see that anger exacerbates social polarization on issues such as ending a close friendship or distancing one’s self from a close family member who supports the opposing political party. Anger, then, plays a broad role in shaping the amount of social polarization that we see between Democrats and Republicans in the contemporary American electorate.

As we have shown, these results are likely a true reflection of partisans’ attitudes and intended behavior. Though our

results are derived from stated behavioral intentions and not observed actions, we are confident that our results are not an artifact of strategic answering by survey respondents. Such confidence stems from, among other suggestive findings, a re-analysis of our experimental results according to an individual’s level of self-monitoring. Because low self-monitors—that is, those who are most likely to be truthful when answering survey prompts—offer similar behavioral intentions as those who score high on self-monitoring, our treatment effects likely represent the true effect of anger on social polarization. It is also important to note that our findings demonstrate the effect of anger on social polarization above and beyond the extreme social polarization that already exists (see, e.g., Iyengar and Westwood 2015).

These findings suggest that American democracy may be in a worrying state. If heterogeneous discussion networks are a staple of democracy, as Mutz (2002, 2006) argues, then the anger-fueled nature of contemporary American politics has done much to weaken an important aspect of the political system. Should politicians continue to elicit anger among voters, it is likely that social polarization in the United States will increase. This social polarization, in turn, facilitates more opportunities for Americans to stereotype and “dehumanize” supporters of the opposing political party (see, e.g., Cassese 2021; Martherus et al. 2019). Thus, the social consequences of political anger are severe.

Our findings also speak to a related, and broader, point about the study of political antipathy in the United States. Partisans’ views of each other are typically examined through the lens of social identity theory (see, e.g., Iyengar et al. 2012; Mason 2018), a theoretical approach that requires both “in-group favoritism and discrimination against the out-group” (Tajfel and Turner 1979, 39). However, studies from this perspective are not always able to adjudicate between in-group love and out-group animosity as the driving factor behind the growth of affective polarization in the United States. Though we do not doubt that behavior might be guided by in-party affection in some instances, our results suggest that the latter mechanism is a key determinant of polarization—particularly when it is explicitly primed by eliciting out-group anger. Thus, our findings support the idea that American political behavior and the development of affective and social polarization are governed by negative affective evaluations of the out-group (Abramowitz and Webster 2016).

Our research also has the potential to inspire future work on emotions in politics outside of political anger. Although we note that anger in particular should drive social polarization because of its negative valence and action-oriented nature, future work could more explicitly examine the role of other negatively valenced emotions in producing social polarization.

Our method of testing the effect of political anger on social polarization could be used to do so. In particular, we recommend pairing our emotional recall task with an instrumental variables approach in order to answer these questions. By doing this, scholars will be able to better isolate the effect of discrete emotions on social polarization.

Nevertheless, plenty of opportunities remain for future work on the relationship between anger and social polarization. One area of research that promises to be fruitful is examining the ways in which the deleterious effects of anger can be mitigated. For instance, does the existence of cross-cutting identities (Mason 2016) weaken the effect of anger on social polarization? On the other hand, future research should also consider the factors that strengthen the relationship between anger and social polarization. Potential compounding factors include the consumption of biased media sources or high levels of political interest. Finally, future work should consider the duration of these effects. Does political anger lead to durable social polarization, or is such polarization more ephemeral in nature? With anger and partisan antipathy on the rise, understanding these questions could not be more pressing.

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