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Partisan goals, emotions, and political mobilization:

The role of motivated reasoning in pressuring others to vote

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Abstract

Direct political action appears irrational because it is costly yet cannot meaningfully affect political outcomes. Research shows that social pressure can solve this problem: the social costs of *not* voting often outweigh the personal costs *of* voting. But this creates another puzzle, one that is our focus: Why do citizens pressure each other? Drawing on theories of partisanship and partisan motivated reasoning, we test whether social pressure is motivated by partisan goals. First, in a population-based US sample, we compare party members versus independents. Second, in a Danish student sample, we experimentally manipulate partisan motivation. We use and validate emotions—anger and gratitude—as an index of motivation to engage in social pressure. In both studies we find identical effects: Partisan motivated reasoners are more likely to be motivated to pressure others and to direct such motivations towards ingroup (and not outgroup) members. Partisan goals help explain social pressure.

Keywords: social pressure, emotions, mobilization, partisanship, evolutionary political psychology

Running Head: Emotions and Pressuring Others to Vote

Supplementary material for this article, including stimuli, are available in the appendix in the online edition. Replication files are available in the JOP Data Archive on Dataverse (<http://thedata.harvard.edu/dvn/dv/jop>). All human subjects research was conducted pursuant to the relevant laws and was approved by the relevant institutional review boards. Support for this research was provided by the National Science Foundation through the Time-Sharing Experiments in the Social Sciences Framework.

Voting constitutes a core channel through which citizens in representative democracies influence policies. Voting's normative importance notwithstanding, voting as an empirical phenomenon is a classic mystery in political science (Green and Gerber 2010; Green and Shapiro 1994). The returns to voting are often null or even negative. People spend considerable time and energy voting. They follow campaigns, deliberate with others, and sometimes wait for hours to cast a ballot. Yet the likelihood that their vote is pivotal for the election outcome is incredibly small. Often the marginal benefit of voting for our preferred candidate is outweighed by the cost.

Political scientists have identified at least two types of solutions for this puzzle. First, voters may be intrinsically motivated to vote (Knack 1992; Riker and Ordeshook 1968), perhaps to express their values or because of a sense of civic duty. A second solution is social pressure. New research shows that the personal costs of voting can sometimes be offset by social penalties for not voting and social rewards for voting (Gerber, Huber, Doherty, and Dowling 2016; Gerber, Green, and Larimer 2008; Harder and Krosnick 2008; Holbrook and McClurg 2005; Panagopoulos 2010). Social pressure includes arguing with others to get them to vote, shaming them for not voting, or rewarding them when they do vote.

But the existence of social pressure immediately invites a new question: Why are people motivated to impose social pressure? Our goal is to begin answering this question.

One argument is that citizens view electoral participation as a norm or civic duty. If such a norm exists, then people might be motivated to uphold this norm, such as pressuring any citizen who is not politically active (Green and Gerber 2010; Knack 1992). In the original formulations of this argument, the sense of a duty to vote emerged from an "affiliation with the society as a whole" (Knack 1992, 136). Furthermore, it was directly contrasted with another type of potential motivation, partisanship. According to Dennis (1970, 832), "The average member of

the public will more likely have internalized the norms of electoral participation than those of partisan competition [...] Voting and elections are ‘us’; parties are ‘them.’”

Newer research, however, reveals the motivating power of partisanship, in part as a reaction to increasing polarization (Bolsen, Druckman, and Cook 2014; Campbell, Converse, Miller, and Stokes 1960; Druckman 2012; Druckman, Peterson, and Slothuus 2013; Green, Palmquist, and Schickler 2004; Huddy, Mason, and Aarøe 2015; Leeper and Slothuus 2014; Taber and Lodge 2006). One way partisanship influences electoral behavior is by engaging people's emotions (Lodge and Taber 2013) such that, for example, partisanship-driven anger leads to more political participation (Groenendyk and Banks 2014).

Here, we integrate these insights on the importance of partisan goals with the literature on social pressure and voting to understand the motivations behind social pressure. We suggest that motivations for social pressures arise from partisan goals. Using observational and experimental studies in the United States and Denmark, we show that people's motivation to pressure others does not arise from a general norm of participation, one that requires political engagement of all citizens. People are instead targeting people likely to vote for *their* preferred political party.

Because social pressure is key to people's democratic engagement, this suggests it arises not only from an affiliation with society (an overarching “us”) but from also from an affiliation with specific competing parties. Importantly, as we find these effects in both the polarized American climate and in a significantly less polarized country (Denmark), our findings suggest that this is a general feature of democratic engagement. Generally, that some parties are “us” and others “them” supplies one reason that the public is motivated to pressure others to vote.

Partisan Goals

Partisan attachments drive how citizens think about politics and who they vote for (Campbell,

Converse, Miller, and Stokes 1960; Green, Palmquist, and Schickler 2004; Greene 1999).

Partisan attachments are enduring and somewhat independent of other political predispositions such as core ideological values (Goren 2005; Green, Palmquist, and Schickler 2004). Partisans contribute more to public goods and punish non-contributors (Bolsen, Ferraro, and Miranda 2014; Fowler 2006; Smirnov, Dawes, Fowler, Johnson, et al. 2010). People assortatively mate along partisan lines (Alford, Hatemi, Hibbing, Martin, et al. 2011). And people process partisanship using the same psychological mechanisms used to process another group identity: race (Pietraszewski, Curry, Petersen, Cosmides, et al. 2015).

Partisan attachments give rise to a particular set of goals: partisan goals (Bolsen, Druckman, and Cook 2014; Druckman, Peterson, and Slothuus 2013; Leeper and Slothuus 2014; Taber and Lodge 2006). Much research has focused on three key components to partisan motivated reasoning: seeking out confirming evidence for one's own partisan opinions, seeking out disconfirming evidence for contrary opinions, and viewing new evidence as consistent with one's preexisting partisan views. For instance, people will signal support for their party by increasing their agreement with policies endorsed by that party, sometimes even agreeing with policies they normally oppose (Bullock 2011; Cohen 2003; Goren, Federico, and Kittilson 2009; Leeper and Slothuus 2014; Petersen, Skov, Serritzlew, and Ramsøy 2012).¹

The research outlined above focuses primarily on events happening internal to a partisan's mind, examining how partisans evaluate new evidence or change their own opinions. But partisans are also motivated to increase the status and position of their preferred party (Huddy, Mason, and Aarøe 2015). So, partisan goals may be oriented toward changing the

¹ Partisans can also be guided by other concerns, such as accuracy (Leeper and Slothuus 2014). Kahan (in press) calls this using "truth convergent criteria." The truth, of course, may not always favor a partisan's side. Sometimes accuracy motives even override partisan motivated reasoning (Bolsen, Druckman, and Cook 2014).

behavior of *others*. Thus, we study if another partisan goal is to benefit one's party using social pressure.

We study two interrelated classes of predictions. First, motivated partisans should primarily want to apply social pressure to potential allies—co-partisans. Second, partisan social pressure should be accompanied by changes in how partisans view the political environment. To facilitate the development of our predictions, we will contrast them with potential predictions from a civic duty perspective. Importantly, however, our concern is to establish the relevance of partisan goals for social pressure rather than disprove the existence of civic goals. In the end, partisan and civic goals most likely co-exist as independent causes of political social pressure.

Targeting potential allies. If social pressure emerges from a sense of civic duty, then people should be motivated to increase electoral participation overall. Partisan social pressure, in contrast, should be targeted for the partisan cause. Thus, social pressure should be directed at people who share your political values and goals—inparty members. Outparty members have comparatively less to offer, as social pressure is unlikely to change who they vote for. Thus, partisans should especially focus pressure on inparty members compared to outparty members.

Perceptions of the political environment. One argument for the importance of civic duty is that people agree voting is important “even if [their] candidate or party doesn't have any chance of winning” (Knack 1992, 142). Recent work, however, suggests that partisan goals also lead people to agree with this statement, given the expressive rewards for standing up for their party in defeat (Huddy, Mason, and Aarøe 2015).

Here, we focus on another argument from the civic duty perspective: People perceive voting as a public good and, hence, as contributing to the good of society or the nation as a whole (Kinder and Kiewiet 1981; Knack 1992). Many political issues are about how to create or

sustain important public goods. As is well known, public goods are vulnerable to free riding (Olson 1965) and people are vigilant about free riders. Whether in the context of welfare attitudes, economic games, or socio-cognitive studies, people apply social pressure in situations involving public goods, e.g., punishing free riders and rewarding contributors (Delton, Cosmides, Guemo, Robertson, et al. 2012; Kiyonari and Barclay 2008; Ostrom, Walker, and Gardner 1992; Petersen 2012; Yamagishi 1986).

We derive two hypotheses from this. First, partisan goals should motivate partisans to portray their party's goals as public goods. By framing them as public goods, they stand to benefit: If other people can be convinced the party is pursuing public goods, then they should be more likely to support the party and more likely to pressure other voters to support the party.

Second, when people view a party's goals as public goods, this should be associated with increased social pressure. As outlined above, people use punishment of free riders and rewarding of contributors—types of social pressure—to maintain public goods. But public goods are not the only type of goods created by collective action. Other goods (e.g., club goods) do not face the threat of free riding and, for these goods, people are not as likely to use social pressure (Delton, Nemirow, Robertson, Cimino, et al. 2013). Thus, the more people perceive their party's goals to be public goods specifically, the more they should use social pressure. In sum, motivated partisanship should lead people to perceive and frame their party's goals as public goods and, in turn, these public goods perceptions should predict greater use of social pressure. In this way, public good perceptions are predicted to constitute a mechanism connecting partisanship and social pressure.

Emotions and Social Pressure

Following Knack (1992), we operationalize motivations for social pressure using emotions.

Research shows that emotions motivate political action and decision making (e.g., Iyengar, Sood, and Lelkes 2012; Lavine, Johnston, and Steenbergen 2012; Marcus, Neuman, and MacKuen 2000). We measure two emotions—anger and gratitude—as felt towards voters and non-voters.

It is useful to break down the process of social pressure into (at least) three stylized steps. First, a person forms an internal motivation to pressure others, such as feeling an emotion. Second, this internal motivation is translated into overt social pressure. Third, the target of social pressure changes (or not) their behavior after the pressure. (Other steps might include assessing the effectiveness of one’s pressure.) Previous work has focused on the third step—what types of social pressure are effective—and this alone has involved substantial research. For instance, Knack’s (1992) seminal study showed that people were likelier to vote if they knew someone who would be angry if they abstained. Our goal here is an initial investigation of the first step—the causes of emotions for social pressure. A full understanding of this step will likely involve sustained research attention as well. Although our primary target is not the second step—the translation of emotions into more overt social pressure—we next summarize past evidence and theory for it and the other steps (see also our “Ancillary Data” section below).

Starting with Darwin (1872), researchers have studied the social functions of emotions (e.g., Keltner and Haidt 2001). For instance, key functions of anger and gratitude are to change or reinforce the behavior of others—to generate social pressure (Tooby, Cosmides, Sell, Lieberman, et al. 2008). Anger even has an evolved facial expression for signaling the emotion to others (Ekman 1992). In terms of our three-step model, first the emotions must be activated, creating an internal motivation to change others’ behavior. Anger is activated when another person is not sufficiently respecting your interests (Petersen, Sznycer, Cosmides, and Tooby 2012; Sell, Tooby, and Cosmides 2009). Gratitude, conversely, is activated when a person is

sufficiently respecting your interests (McCullough, Kilpatrick, Emmons, and Larson 2001).

Second, activated emotions are, at least sometimes, translated into overt social pressure. For instance, people who experience gratitude act to reinforce the positive behaviors of others (Tsang 2006). Angry people often talk or argue with the target of their anger (Averill 1983). Anger predicts using aggression to enforce one's interests (Sell, Tooby, and Cosmides 2009). More broadly, anger in political contexts spurs mobilization (Groenendyk and Banks 2014; Valentino, Brader, Groenendyk, Gregorowicz, et al. 2011; Weber 2013). As Valentino and colleagues (2011) write, "anger can powerfully motivate political participation" (p. 168).

Supporting the third step, research shows that being the target of emotional expression can change behavior, both for anger (Adam and Brett 2015; Reed, DeScioli, and Pinker 2014) and for gratitude (Algoe, Fredrickson, and Gable 2013). Furthermore, political science research shows that being targeted with gratitude increases political action (Panagopoulos 2011).

Summary of Hypotheses

In the context of our studies, the theory of partisan goals predicts that partisans are especially angry at co-partisans who are not politically active. They are failing to work toward shared interests and their behavior must be changed. There should be comparatively little anger expressed toward inactive out-partisans. The theory of partisan goals also predicts that partisans would be especially grateful toward contributing co-partisans. They are working toward shared interests and their behavior must be reinforced so that they continue to be active. There should be comparatively little gratitude expressed toward active out-partisans.

Hypothesis 1: Motivated partisans will be especially concerned with mobilizing others to be politically active and reinforcing the behavior of those who are already active; this will be realized through the emotions of anger or gratitude.

Hypothesis 2: Motivated partisans will preferentially focus on co-partisans, rather than out-partisans.

Hypothesis 3: Motivated partisans will be more likely to see their political goals as public goods.

Hypothesis 4: Perceiving political goals as public goods will predict the emotional motivations related to social pressure.

These predictions contrast with a key alternative hypothesis: that people apply social pressure because voting is a norm or a civic duty. On the civic duty hypothesis, people attempt to get out the vote and motivate others to be politically active because that is the duty of democratic citizens. The duty is not partisan; the duty to motivate others should be applied regardless of others' political affiliations and opinions. Viewing social pressure through the theory of partisan motivated reasoning, in contrast, leads to the prediction that pressure is exerted with narrow partisan goals. The goal is to get people to vote for the inparty, not for any party.

Study 1

In Study 1 we used a population-based experiment with US adults to test these hypotheses. Respondents considered a hypothetical presidential election and reported their motivation for social pressure—anger and gratitude—toward ingroup and outgroup members (a within-subjects experiment). Respondents reported how angry they would be at ingroup and outgroup members who were not participating in the electoral process and how grateful they would be at ingroup and outgroup members who were participating. Here, we seek to understand the sources of social pressure. Following previous studies (Petersen, Sznycer, Cosmides, and Tooby 2012), we used hypothetical scenarios to obtain a controlled setting for understanding these sources. Recent work shows partisans are especially concerned with winning per se, rather than with specific issues (Huddy, Mason, and Aarøe 2015). Thus, our scenario involved electing a like-minded

candidate, rather than specific issues, so we could focus directly on partisan social pressure.

In this study, we compared partisans to independents. (Study 2 uses an experimental manipulation.) Regardless of whether respondents were party members or independents, they imagined cooperating with other like-minded people to achieve a shared goal (i.e., electing their preferred candidate). We controlled for several possible differences between party members and independents. (1) Political identification: Party members might identify more strongly with their political commitments. This is a conceptual analogue of a typical partisan strength variable, except it can be applied to both partisans and independents. (2) Expected personal benefit: People who join parties might expect greater personal gains. (3) Past contributions to one's political goals: Party members may have contributed more in the past, affecting their punitive sentiment. (4) General anger or gratitude: Perhaps, for whatever reason, party members are more emotional or more willing to express emotions in political contexts than independents. (5) Political ideology: one part of the ideological spectrum may be more emotional and this might covary with being an independent. Finally, we controlled for demographic variables.

Method

The experiment was fielded through the Internet in August 2005 by Knowledge Networks on behalf of Time-Sharing Experiments in the Social Sciences. Of 923 participants, 70% identified as party members and 30% as independents (more sample details are in the online appendix). Participants responded to an upcoming, hypothetical presidential election involving a candidate they preferred and a candidate they did not. For partisans, this was their own party's candidate and the out-party's candidate. For independents, the candidates were described as sharing or not sharing the participant's views. We used a 2x2 within-subjects experimental design, such that participants responded to questions about 4 different hypothetical voters (one per cell of the

within-subjects experiment). One manipulation varied whether the voter did or did not share the same political orientation as the participant. The other manipulation varied whether the voter was or was not planning to be politically active and to vote in this election.

Participants rated how angry they would be at each voter who was not planning to be politically active, separately for the ingroup voter and the outgroup voter. Participants also rated how grateful they would be at each voter who was planning to be politically active, again separately for the ingroup voter and the outgroup voter. The ratings were made on scales ranging from 0 to 100. See the appendix for materials. The appendix also describes how we controlled for public goods perceptions (indexed as seeing one's candidate elected as a national benefit), expectations of personal benefit if one's candidate won, political identity, past political contributions, and ideology (conservatives = 0, moderate independents = .5, and liberals = 1).

Results

All variables have been rescaled to vary between 0 and 1, including dichotomous variables. Party members are dummy coded as 1 and independents as 0. For simplicity, we use the terms “ingroup” and “outgroup” because they can apply to partisans and independents.

Are party members, compared to independents, angrier at inactive ingroup members?

Yes, as shown in Figure 1A, party members are angrier than independents at inactive ingroup members (supporting Hypothesis 1). Importantly, this difference is significant when controlling for demographic factors of sex, age, race, education, and income, for possible contaminating factors of political identity, expected personal benefits, past contributions, and ideology, and for generalized levels of anger (indexed as anger at an outgroup member who is inactive). As shown in Table 1, despite these controls, party members compared to independents are angrier at inactive ingroup members ($p < .001$).

Are party members, compared to independents, more grateful toward active ingroup members? Yes, as shown in Figure 1B, party members are more grateful than independents toward active ingroup members (supporting Hypothesis 1). Importantly, this difference is significant when controlling for demographic factors, contaminating factors, and generalized levels of gratitude (indexed as gratitude toward an active outgroup member). As shown in Table 1, despite these controls, party members compared to independents are more grateful toward ingroup contributors ($p = .015$).

Do these differences disappear when considering outgroup rather than ingroup members? As predicted, yes, the differences between party members and independents disappear when they report their emotions toward outgroup members (supporting Hypothesis 2). First, consider anger at the politically inactive. As shown in Figure 1A, whereas there is a noticeable difference in anger between party members and independents when considering ingroup members, this difference is much smaller and in fact reversed for outgroup members. Although the difference between party members and independents in anger at outgroup members is significant ($p = .002$; see Table 1), it is in the opposite direction such that independents are angrier at a politically inactive outgroup member. A repeated measures analysis of variance (ANOVA), using all of the same control variables, reveals that the difference between party members and independents is larger for anger directed toward ingroup compared to outgroup members (for the interaction, $F(1,909) = 18.0, p < .0001$).

Next, consider gratitude toward the politically active. As shown in Figure 1B, whereas there is a noticeable difference in gratitude between party members and independents when considering ingroup members, this difference is eliminated for outgroup members. As shown in Table 1, the difference between party members and independents in their gratitude toward

outgroup members does not approach significance ($p = .78$). A repeated-measures ANOVA, with all the same control variables, reveals that the difference between party members and independents in gratitude is larger for active ingroup compared to outgroup members (for the interaction, $F(1,909) = 2.7$, one-tailed $p = .05$).

Finally, we note that both partisans and independents are considerably angrier at ingroup members who are not contributing relative to non-contributing outgroup members ($ps < .001$) and considerably more grateful toward ingroup members who are contributing relative to contributing outgroup members ($ps < .001$). Thus, in addition to any patterns that separate partisans from independents, both generally focus their emotions on ingroup members.

Are party members more likely to perceive their political goals as public goods? Yes: As shown in Table 1, party members, compared to independents, were more likely to perceive their political ends as public goods (supporting Hypothesis 3). To parallel our previous analyses, we conducted this analysis once using anger at an outgroup free rider as a covariate and once using gratitude toward an outgroup contributor; in both cases, the difference between party members and independents was significant ($ps = .030$ and $.026$, respectively). To show the specificity of these effects, we ran parallel analyses but instead used expectations of personal benefits, rather than public good benefits, as the dependent variable. In neither case was there a difference between partisans and independents, $ps > .55$.

We also note that the more that voters were committed to their political identity, the more they viewed their political ends as a public good (Table 1). We also conducted separate analyses for partisans and independents to see whether this effect replicated across both groups. It did and the effect sizes were comparable to the overall effect size (all $bs \approx .11$; all $ps < .05$).

Do public good perceptions predict anger and gratitude? We just showed that party

members, relative to independents, are more likely to view the election of their candidate as a public good. But do public good perceptions translate into increased social pressure? Yes: As shown in Supplemental Table 6, people who perceived their political ends to be a public good were angrier at ingroup free riders ($b = .12, p = .01$) and more grateful toward ingroup contributors ($b = .36, p < .001$). The effect sizes were similar whether the model was estimated separately for partisans or independents. Finally, for readers interested in mediation, see the supplemental information.

Discussion

Partisans, compared to independents, experienced more motivation for social pressure (Hypothesis 1) and focused on ingroup members (Hypothesis 2); this was expressed through anger and gratitude. Partisans were also more likely to perceive their political goals as public goods (Hypothesis 3), which predicted social pressure (Hypothesis 4). Nonetheless, Study 1 suffers from the problem that partisanship was not randomly assigned. We attempted to control for preexisting differences (by controlling for political identity, past contributions, expected personal benefits, and general levels of anger or gratitude), but it is possible other confounding factors went unmeasured and thus went uncontrolled. Moreover, in Study 1, we cannot discern whether partisanship—as predicted by a motivated reasoning perspective—causes public goods perceptions or the reverse causal ordering. To provide converging evidence for our hypotheses, in Study 2 we use a complementary approach: experimental manipulation.

Study 2

Study 2 used an experimental approach to directly manipulate whether people had an active partisan motivation. Our manipulation was modeled after classic social psychology research on perspective taking (Batson et al. 1991). In our case, the perspective manipulation was

specifically designed to contrast a partisan perspective versus a neutral, objective perspective. This is akin to the directional versus accuracy motivations often discussed in the literature on partisan motivated reasoning (Druckman 2012; Kahan in press; Leeper and Slothuus 2014).

On the one hand, our method is similar to Bolsen et al. (2014). In their motivated reasoning condition, participants evaluated a policy while thinking about “your party and why you affiliate with it” (p. 244); our participants evaluated our materials “while thinking of yourself as a member of your preferred political party.” In their accuracy condition, Bolsen et al. asked participants to evaluate a policy “in an even-handed way and from various perspectives” (p. 244); we asked participants to evaluate our materials as “an objective, neutral observer”.

On the other hand, our method differs somewhat from past approaches; we did this to avoid the literature developing a mono-operation bias for this type of manipulation (Shadish, Cook, and Campbell 2002). To induce accuracy, participants are often asked to justify the opinions they form (as in Bolsen, Druckman, and Cook 2014). We did not include justification, which might weaken whether our objectivity condition induces accuracy. This could lead people to rely on their default motivations—which often will be partisan motives (Bolsen, Druckman, and Cook 2014). However, experimental primes can nonetheless increase partisan motivated reasoning over and above this default (likewise, an accuracy prime can eliminate this default) (Bolsen, Druckman, and Cook 2014). Thus, so long as at least one of our experimental conditions effectively primes partisan motivation or accuracy, the present study serves as an experimental test of whether partisan motives increase emotional social pressure. We emphasize that our goal with this manipulation is to create a difference between conditions in the extent to which partisan motives are activated; we are less concerned with evaluating each condition in isolation and, hence, did not include a neutral control group. This choice also allowed us to

achieve reasonable sample sizes per cell, given logistical constraints of this data collection.

Both our and previous methods use explicit perspective taking manipulations. We acknowledge that this opens the possibility of demand effects. At the same time, we believe this worry is mitigated to the extent Study 2 replicates Study 1: First, our predictions include a specific interaction pattern that would be difficult for subjects to infer and create on demand. Second, if the pattern replicates, it will be the same pattern across two very different samples and different operationalizations of partisan motives.

To increase the generalizability of our results, Study 2 used a sample from Denmark, a multi-party parliamentary system with significantly higher political engagement than the US and significantly less polarization (Elder, Thomas, and Arter 1988).

Method

One hundred seventy-nine students (98 women) from the political science department at Aarhus University, Denmark, completed this survey in June of 2014. Unlike Study 1, only participants who identified with a party could participate. Given that we wanted to experimentally manipulate the extent to which partisan motivations were activated, we wanted to hold constant whether participants identified with a party (see online appendix for party breakdown).

The materials for Study 2 were largely identical to Study 1 with some exceptions. First, the materials were translated into Danish. Second, instead of being about a presidential election, subjects were asked to imagine a parliamentary election in which they were trying to win sufficient seats to secure a change in prime minister; the current prime minister was from an opposing party. Third, although Denmark has more than two major political parties, all participants who belonged to left-wing parties were told that the outgroup members belonged to Venstre and all who belonged to right-wing parties were told that the outgroup members

belonged to Socialdemokraterne. Although Socialdemokraterne was not the most common left-wing choice among our student sample (see appendix), it is the most prominent left-wing party in national Danish politics. Venstre is the most prominent right-wing party. Fourth, we added a second question to tap public good perceptions. Thus, in addition to asking whether the nation as a whole would benefit, we also asked about whether members of your political party as a whole would benefit (another theoretically important type of public good; Olson 1965). These questions were averaged for the measure of public goods perceptions ($r = .30$).

The biggest change we made was to introduce a partisan motivation manipulation. Prior to completing the survey, half of the participants were given the partisan motivation version: “As you read through this material, please respond to it while thinking of yourself as a member of your preferred political party. Please keep in mind that you are a member of your preferred political party. While reading and answering the questions, think about yourself in explicitly partisan terms—as a member of your political party.” The remaining participants were given instructions to be neutral and objective: “As you read through this material, please respond to it as if you were an objective, neutral observer. Although you may prefer one party or another, please put that aside as you read. While reading and answering the questions, think about yourself as neutral and unbiased—as someone not affiliated with any political party.” After every two or three questions participants were reminded of the perspective they should be taking.

Analysis strategy

Because Study 1 only measured partisanship, we tried to mitigate confounds with a series of control variables. In Study 2, motivation is randomly assigned and experimentally induced, and therefore control variables are not needed or used. The one exception is that we controlled for general emotionality. As shown in Table 1 and Supplemental Tables 4 and 5, people’s

willingness to express anger or gratitude at ingroup members strongly correlated with willingness to express anger or gratitude at outgroup members. Past research in psychology also reveals large individual differences in willingness to express emotions (Gross and John 2003). By controlling for emotionality we removed this source of noise, allowing us to more clearly see the effects of the mindset manipulation. All variables were rescaled to vary between 0 and 1.

Results

Are motivated partisans, compared with neutral observers, angrier at inactive ingroup members? Yes. As shown in Figure 1C, motivated partisans are angrier at inactive ingroup members (supporting Hypothesis 1); this is confirmed in an ANOVA controlling for anger at outgroup members, $F(1, 176) = 3.9, p = .049$.

Are motivated partisans, compared with neutral observers, more grateful toward active ingroup members? Yes. As shown in Figure 1D, motivated partisans are more grateful toward active ingroup members (supporting Hypothesis 1); this is confirmed in an ANOVA controlling for gratitude toward outgroup members, $F(1, 176) = 8.8, p = .003$.

Do these differences disappear when outgroup members, rather than ingroup members, are considered? Yes, as shown in Figure 1C,D these differences disappear or even reverse once subjects considered outgroup members (supporting Hypothesis 2). There is no difference between motivated partisans and neutral observers in their anger at inactive outgroup members (ANOVA controlling for anger at ingroup members, $F(1, 176) = 2.5, p = .11$). And, if anything, the direction of this effect is in the opposite direction. For gratitude, there is a significant difference but here it is neutral observers who are *more* grateful than motivated partisans toward active outgroup members—opposite the pattern for active ingroup members (ANOVA controlling for gratitude toward ingroup members, $F(1, 176) = 14.3, p < .001$).

Next, we used mixed-model ANOVAs to test whether treatment effects for ingroup members differed from treatment effects for outgroup members; in other words, we tested for interactions. We conducted one model each for anger and gratitude. The repeated-measures factor was whether the hypothetical voter was ingroup versus outgroup. The between-subjects factor was motivated partisan versus neutral observer. For anger, there was a significant interaction, $F(1, 177) = 4.0, p = .047$. For gratitude, there was also a significant interaction, $F(1, 177) = 17.4, p < .001$. Thus, although motivated partisans were especially angry at inactive ingroup members and especially grateful toward active ingroup members, these patterns were either eliminated or even reversed when considering outgroup members.

We also note that both motivated partisans and neutral observers are considerably angrier at ingroup members who are not contributing relative to outgroup members ($ps < .05$) and considerably more grateful toward ingroup members who are contributing relative to outgroup members ($ps < .001$). Thus, in addition to any patterns that separate motivated partisans from neutral observers, both generally focus their emotions on ingroup members.

Are motivated partisans more likely to perceive their political goals as public goods?

Yes. To keep this analysis parallel with others in this section, we conducted two ANOVA models. One compared public good perceptions as a function of motivation while controlling for anger at an inactive outgroup member; the other while controlling for gratitude at an active outgroup member. Both analyses revealed that the partisan motivation manipulation caused greater public good perceptions (supporting Hypothesis 3), $F_s(1, 176) = 3.0$ and 3.3 , one-tailed $ps = .042$ and $.036$. Whereas the mean public good perception for neutral observers was $M = .64$ ($SD = .17$), the mean for motivated partisans was $M = .68$ ($SD = .16$); without using any covariates the difference is still significant, one-tailed $p = .045$. To show the specificity of this

effect to public good perceptions, we re-ran the ANOVA with perceptions of personal benefit as the dependent variable. When emotion covariates were included, there were no effects ($ps = .27$ and $.09$); if no emotion covariates are used, there is still no effect ($p = .33$).

Do public good perceptions predict anger and gratitude? We just showed that experimentally induced motivated partisans are more likely to view the election of their candidate as a public good. But do public good perceptions translate into increased social pressure? Yes: Greater public good perceptions are correlated with increased anger and gratitude at ingroup members (supporting Hypothesis 4). To keep the analyses parallel with the rest of this section, we used regression analyses that partialled out the same emotion toward outgroup members. The regression weight of public good perceptions predicting anger at an inactive ingroup member was $.21$ ($SE = .11$), $p = .049$. The regression weight of public good perceptions predicting gratitude toward an active ingroup member was $.63$ ($SE = .09$), $p < .001$. Thus, public good perceptions are correlated with stronger emotions toward ingroup members.

Ancillary Data on the Steps of Social Pressure

Recall our simplified three-step model of social pressure: (1) a person generates an internal motivation for social pressure, (2) they (sometimes) translate that motivation into overt actions or expressions, and then (3) if the social pressure is effective, the target of the pressure has their behavior changed or reinforced. Our studies focused on the first step. Here we provide additional evidence for the other two steps (see the online appendix for detail).

In support of step two, we collected additional data showing directly that when people report *feeling* more anger or gratitude towards co-partisans in the context of elections, they also report being more likely to *express* it ($rs \geq .70$) and more likely to *act* in ways that change (in

case of anger) or maintain (in case of gratitude) their co-partisans' voting behavior ($r_s \geq .41$).²

To provide empirical support for step three, we were able to rely on existing data sources. Specifically, we analyzed the 1991 and 1997 ANES Pilot Studies and show that people who report receiving anger or gratitude do in fact report increased political participation. Although these sources of evidence—our own data, our ANES analyses, and past theory and research—each have limitations (see online appendix), collectively we believe they warrant our approach of using emotions to operationalize an internal motivation to pressure others.

General Discussion

Citizens may be more likely to participate in politics because of social pressure. Typically, researchers are asking what forms of social pressure are most effective at mobilization. Here, we asked a complementary question, revealing the underlying motivations for *why* people desire to pressure others. In this regard, there is no doubt that social pressure fulfills an important role in democratic societies and helps sustain the large electoral participation that is key for a legitimate democratic system. At the same time, however, we have found that for many citizens the motivation for pressuring others does not flow from a concern for democratic norms and civic duty. Instead, people are, at least partly, motivated by partisan goals and express social approval and disapproval in a way that systematically targets those that support their political goals.

Specifically, we have provided evidence for a number of interconnected hypotheses emerging from the theory of partisan motivated reasoning: Party members, compared to independents, were more likely to be motivated for social pressure (Hypothesis 1). This was also true of people experimentally induced to have partisan motives (Hypothesis 1). Motivated

² In the online appendix, we also leverage existing data sources to provide additional evidence. Specifically, additional data from Study 1 show that feeling gratitude is correlated with overt social pressure ($r = .50$). Moreover, using the 2012 ANES study, we show that respondents who react emotionally to presidential candidates are more likely to use social pressure; specifically, they try to convince others to vote a particular way.

partisans were more likely to target ingroup members (Hypothesis 2). (In fact, everyone targeted mobilization at ingroup members.) Motivated partisans were also more likely to perceive their political ends as a public good (Hypothesis 3). Public good perceptions, moreover, predicted motivations for social pressure (Hypothesis 4).

The similarity of the results in the two studies is striking. Despite being conducted years apart, with observational versus experimental approaches, in different countries, in different electoral systems, with different types of samples, the panels in Figure 1 look almost identical: Partisan goals reliably lead to social pressure—anger and gratitude—being targeted at ingroup members. When thinking of ingroup members, US party members and experimentally primed Danish students had the strongest emotional reactions; on 0 to 1 scales, they averaged approximately .43 for anger and .70 for gratitude. Simultaneously, when thinking about outgroup members, these same participants also showed the weakest emotional responses; they averaged approximately .28 for anger and .31 for gratitude. Thus, motivated partisans were about 50% angrier when considering ingroup rather than outgroup members and about 125% more grateful.

Related to this similarity, we note that the US and Denmark are very different in levels of political polarization, with the US much more strongly polarized. Nonetheless, similar results were found in both countries, suggesting that partisan motivated pressure is a more general feature of party politics, rather than confined entirely to polarized political environments.

Motivated partisanship and civic duty

Motivated partisans primarily targeted ingroup members. This is consistent with the hypothesis that people are pursuing partisan goals, not enforcing a norm of civic duty. One could imagine two versions of this alternative hypothesis, both of which are ruled out by our data. On one reading, the norm of civic duty is enforced by everyone, motivated partisan or not, and is applied

to everyone, ingroup or outgroup. On this view, we would expect no differences based on partisan motivation or ingroup/outgroup status (in other words, all bars within a panel in Figure 1 would be the same height). Contrary to this prediction, we find that motivated partisans are especially willing to apply social pressure and do so selectively to ingroup members.

On a more textured reading, perhaps partisans are simply more engaged with political life (e.g., Bolsen, Ferraro, and Miranda 2014) and because of this they are more likely to attempt to enforce the norm of civic duty. This predicts that partisans should be angrier and more grateful than independents. But, importantly, it also predicts that there should be no differences in how they react to ingroup and outgroup members. This combination of predictions is not supported in our data. Instead, partisans mainly put pressure on ingroup members. It's also not clear if this more nuanced reading makes predictions regarding experimentally induced partisan motivation. If it can be applied to experimental induction, it should still predict no differences in emotional expression toward ingroup and outgroup members. Our approach based on partisan goals appears to provide a better account than a civic duty approach in isolation.

Independents, neutral observers, and civic duty

Although motivated partisan reasoning predicted the majority of our results, there was one unexpected class of findings: independents and neutral observers tended to respond more strongly than motivated partisans to outgroup members. Another way of looking at this result is that although motivated partisans distinguished between ingroup and outgroup members, people with neutral mindsets did not do so as strongly. Substantively, this suggests that independents and neutral observers were behaving more closely in line with the strictures of civic duty. Based on this, we would conjecture that partisans who are ambivalent about their party might also more closely follow the predictions of civic duty (Lavine, Johnston, and Steenbergen 2012).

On balance, however, we think the results for these subjects underscore the ubiquity and power of partisan goals. Although independents process their political environment differently than partisans (Petrocik 2009), they nonetheless do have their own political interests and goals. Moreover, the scenario we used was designed to emphasize to both partisans and independents that they should view this election as an opportunity to pursue their political ends. Despite these parallels, partisans still showed more social pressure—at least when considering ingroup members—exactly as predicted by a partisan motivated reasoning approach.

The results from the experimental study also reinforce the power of partisan motives. Recall that all participants in this study were partisans. Half of them were randomly assigned to take a neutral perspective—to think about the election as a neutral and unbiased observer. This should push people to act as predicted by a civic duty approach. And, in fact, it did have this effect when comparing observers to motivated partisans. But looking just at the data for people with neutral mindsets, it is clear that partisan goals still affected people’s emotional expression: Despite the instructions to neutrality, people in this condition still showed more anger and gratitude toward ingroup than outgroup members; their partisan goals still shone through.

The role of public good perceptions

Partisan motivation changed how people viewed their political world. Motivated partisans viewed their political goals as public goods, which correlated with increased gratitude and anger. But it is important to offer two caveats. First, public good perceptions are probably not necessary for mobilization efforts to occur. Our psychology could self-servingly incentivize contributions from others, independently of whether they are perceived as free riders or not (Delton, Nemirow, Robertson, Cimino, and Cosmides 2013). But increasing evidence suggests that people are much more inclined to behave in self-serving ways if they, at the same time, can appear morally

righteous (DeScioli, Massenkoff, Shaw, Petersen, et al. 2014; Tooby and Cosmides 2010). It is simply easier to mobilize others if they can be persuaded that they are free riding. Second, these perceptions are not necessarily a reflection of partisan bias; goals pursued by a party could very well be sincerely viewed as public goods. Most partisans believe that they are doing what is best for society at large (e.g., Goren 2005). On the other hand, it is telling that public good perceptions are predicted by strong political identities (pp. 14-15); it seems unlikely that what is desired by the most partisan among the electorate would happen to also be what is best for the nation as a whole. Nonetheless, it is up to future research to determine how much of this belief is a reflection of motivated reasoning (Lodge and Taber 2013).

The origins of partisan motivated social pressure

Our research on partisan motivation has been informed by recent work in evolutionary political psychology (Fowler and Schreiber 2008; Lopez, McDermott, and Petersen 2011; Petersen 2015; Schreiber 2007). In particular, we see partisan motivation as arising from a more general psychology for collective action, particularly collective action among relatively enduring groups (Tooby, Cosmides, and Price 2006). This literature has intensely studied punitive sentiment toward free riders and rewarding behavior toward contributors (Delton, Cosmides, Guemo, Robertson, and Tooby 2012; Kiyonari and Barclay 2008; Price, Cosmides, and Tooby 2002). Thus, for collective actions, such as political collective action, these psychological systems are likely in play. On this view, partisan motivated reasoning is still an apt name—except it should be thought of as partisan in the broad sense, rather than specifically about political parties.

As many psychologists have documented, people can be attached to multiple groups, sometimes overlapping, sometimes non-overlapping, sometimes nested at higher and lower levels (Tajfel 1982). As evolutionary psychologists and others have documented, the mind can

track which group affiliation is more important at any given moment (Kurzban, Tooby, and Cosmides 2001; Pietraszewski, Curry, Petersen, Cosmides, and Tooby 2015). This can help explain an issue we raised at the beginning of our paper: In our current polarized political environment (particularly in the US), parties are especially prominent. But decades ago this was less true, inspiring earlier writers to suggest that social pressure should primarily be targeted at reinforcing civic or national duties. Of course, party competition is a key part of modern electoral systems, regardless of polarization, which would explain why we see effects in Denmark after priming. In sum, an evolutionary approach to political science allows for both universals—categories for groups, collective action, punitive sentiment, reward sentiment—and variation—dynamic differences in the relative salience of groups.

Conclusion

Overall, this work shows the utility of placing social pressure into a broader perspective of the psychology of partisan motivated reasoning. By doing so we were able to make a series of confirmed predictions connecting partisanship, emotions, public goods, and experimental priming and, as consequence, began a project we hope others take up: Why do ordinary citizens pressure each other?

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Table 1

Regression coefficients (standard errors) for anger, gratitude, and public good perceptions as a function of party members versus independents (Study 1)

	Anger at Inactive Ingroup Member			Anger at Inactive Outgroup Member			Public Good Perception (Anger Control)		
	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value
Party Member (=1), Independent (=0)	0.07	0.02	<.001	-0.05	0.02	0.002	0.03	0.01	0.030
Anger at Outgroup Member	0.50	0.03	<.001	—	—	—	-0.02	0.02	0.463
Anger at Ingroup Member	—	—	—	0.43	0.03	<.001	—	—	—
Right-Left Ideology	0.02	0.02	0.201	-0.02	0.02	0.224	0.03	0.01	0.007
Political Commitment	0.04	0.04	0.290	-0.04	0.04	0.271	0.11	0.03	<.001

	Gratitude for Active Ingroup Member			Gratitude for Active Outgroup Member			Public Good Perception (Gratitude Control)		
	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value
Party Member (=1), Independent (=0)	0.04	0.02	0.015	-0.01	0.02	0.781	0.03	0.01	0.026
Gratitude at Outgroup Member	0.16	0.03	<.001	—	—	—	-0.06	0.02	0.003
Gratitude at Ingroup Member	—	—	—	0.20	0.04	<.001	—	—	—
Right-Left Ideology	0.00	0.02	0.847	-0.03	0.02	0.168	0.03	0.01	0.010
Political Commitment	0.08	0.04	0.037	-0.07	0.04	0.101	0.11	0.03	<.001

Note. All variables scaled to be between 0 and 1. Although the models shown here included variables for past contributions, expected personal benefits, sex, race, age, education, income, and a constant, these variables are not shown in this table; the full models are shown in Supplemental Tables 4 and 5.

Figure 1. Anger and gratitude as a function of party member versus independent in a population-based US sample (Panels A and B) and a perspective manipulation in a student sample in Denmark (Panels C & D). Bars are raw means; error bars S.E.s.

Supplemental Information
for
Partisan goals, emotions, and political mobilization:
The role of motivated reasoning in pressuring others to vote

2012 ANES Analyses

Our primary goal with this paper is to test what causes people to feel the emotions that serve as internal motivations for social pressure. There are (at least) two additional steps beyond this: translating those emotions into overt behavioral social pressure and the target of the social pressure changing their behavior. As we discussed in the main text, there is evidence from psychology and political science that emotions are translated into overt action, including actions to change others' behavior (Averill 1983; Tsang 2006; Valentino, Brader, Groenendyk, Gregorowicz, and Hutchings 2011; Weber 2013). In this section our goal is to provide additional evidence on this point. This would support our claim that researchers can meaningfully use emotional reactions as a window into social pressure. To do this we draw on the most recent ANES data collection, from 2012. Additional research also shows that being the target of emotional social pressure does change behavior (Adam and Brett 2015; Algoe, Fredrickson, and Gable 2013; Knack 1992; Panagopoulos 2011; Reed, DeScioli, and Pinker 2014). In a later section we adduce additional evidence on this point, showing that emotional social pressure does predict political activity. To do so, we use two ANES Pilot Studies. Finally, in a following section we describe the limitations of the additional sources of data we draw on.

In our analysis of the 2012 ANES we used as a measure of social pressure a question that asked respondents whether they have talked with others to convince them how to vote. As our

independent variables, we used questions that asked respondents whether the Democratic and the Republican candidates for president inspired a series of emotions in the respondent. Usefully for our purposes, one emotion asked about was anger. Unfortunately, gratitude was not included. However, respondents were asked whether the candidates made them proud. When used in this sense—how proud you are at someone else—we think this emotion is closely associated with gratitude. It represents a positive evaluation of a person and, if it were expressed toward them, would presumably reinforce the behaviors that inspired the pride.

Prior to running our analyses, we reasoned that social pressure would be primarily predicted by anger toward the *outgroup* candidate and by pride toward the *ingroup* candidate. Specifically, we reasoned that people who are angry at an ingroup candidate face two competing demands: on the one hand, they do not like their party's candidate; on the other, they generally want to support their party. These motives work at cross-purposes, mitigating whether they translate their anger into social pressure. For people who are angry at the outgroup candidate, however, these impulses work synergistically: They can work against the candidate they dislike while also supporting their party; this allows their emotion to be more easily translated into overt social pressure. Similarly, people who are proud of an outgroup candidate face competing motives, whereas people who are proud of an ingroup candidate face synergistic motives.

Beyond predicting our pattern of these results, this reasoning more broadly highlights why we think it is useful to separate into distinct steps the generation of the internal feeling of emotion for social pressure and the overt enactment of social pressure. The link is not necessarily direct; other variables may amplify or suppress it. This also underscores why fully understanding the process of social pressure will require sustained research attention.

Method

Participants

We analyzed data from 4,060 respondents (49.9% women) who had full data on the variables we used and reported as being party members or leaners (58.9% Democrats or Democratic leaners; 41.1% Republicans or Republican leaners). The majority (63.2%) were white, with 16.3% black, 1.5% Asian or Pacific Islander, 0.5% American Indian, 15.1% Hispanic, and 3.4% other or multiple races. The average age was 50 years. The median education was 13 years and the median family income was in the bracket of the 34th to 67th percentiles.

Materials

Our dependent variable, the measure of social pressure, was a question that asked “During the campaign, did you talk to any people and try to show them why they should vote for or against one of the parties or candidates?” (coded as “yes” = 1 and “no” = 0).

Our four independent variables, the measures of anger and pride toward the Democratic and Republican presidential candidates, used a common prompt: “Now we would like to know something about the feelings you have toward [NAME: Barack Obama or Mitt Romney]. Has [NAME] -- because of the kind of person he is, or because of something he has done -- made you feel [AFFECT: angry or proud; each emotion required a separate response]?” (coded as “yes” = 1 and “no” = 0).

In addition to demographic variables, in both studies we used an additional control variable of ideology, a 1 to 7 rating scale that ranged from “extremely liberal” to “extremely conservative.” All variables were recoded to be between 0 and 1. Given the dichotomous dependent variable, we used binary logistic regression.

Results

In total, we conducted four regression analyses. Separately for Democrats and Republicans we tested whether anger at the candidates was associated with social pressure (the first two models in Supplemental Table 1). We entered both anger questions simultaneously to ensure that we were assessing emotional reactions specific to a particular candidate, rather than a general willingness to express anger. As expected, anger at the outparty candidate was associated with social pressure: for Democrats the odds ratio = 2.45 ($p < .001$); for Republicans the odds ratio = 2.83 ($p < .001$). The associations involving anger at the inparty candidates were not significant.

For pride, we again tested separate models for Democrats and Republicans and included both measures of pride simultaneously. As expected, pride at the inparty candidate was associated with social pressure: for Democrats the odds ratio = 2.27 ($p < .001$); for Republicans the odds ratio = 2.15 ($p < .001$). The correlations involving anger at the outparty candidates were either smaller or not significant.

Thus, Democrats who were angry at Romney or proud of Obama were more likely to engage in social pressure, as were Republicans who were angry at Obama or proud of Romney.

Complementary Data from our TESS Study

The above results provide evidence that emotions are associated with overt attempts at social pressure. However, the ANES did not include the emotion of gratitude; the closest was pride felt toward someone else. We can supplement this with our own data, using measures directly related to gratitude. One of the primary dependent measures of our Study 1 is a measure of gratitude at ingroup members. In a separate part of our TESS study collected for another research question, we included an item that measured positive encouragement toward a member of one's preferred party. (Specifically, this part of the study investigated whether positive encouragement was used

to motivate people to refrain from cancelling their membership and, hence, this was a different voter than the voters asked about in our anger and gratitude measures and addresses a question beyond the scope of our focus in this paper.) We find that subjects who report feeling more gratitude toward a contributing ingroup member are also more likely to report that they would use social pressure—positive encouragement—toward this other ingroup member. This helps to triangulate on the hypothesis that feeling emotion is in fact linked with overt social pressure. Statistically, these measures of gratitude and encouragement are strongly correlated ($r = .50, p < .001$). This is not simple acquiescence bias: When controlling for the closely parallel measure of gratitude toward an *outgroup* member, the partial correlation between positive encouragement and ingroup gratitude is virtually unchanged ($r = .49, p < .001$). This provides more evidence that emotions—here, specifically gratitude—are associated with overt social pressure.

Ancillary Data Collection

Although the above data have the benefit of being collected on national samples, none of it directly addressed whether feeling an emotion is directly correlated with expressing social pressure, specifically when the social pressure is directed at the same person who inspired the emotion. To fill this gap, we collected additional data from an online convenience sample. In this study, we measured the feeling of emotions, the expression of emotions, and other manifestations of social pressure toward an ingroup member. We created one set of measures for anger and a second set for gratitude.

This design allows us to directly test whether felt emotions and social pressure—both toward the same target—are correlated. As a beneficial by-product, it also allows us to replicate the correlational findings from Study 1 in the main paper.

Method

Participants

We collected data in May 2017 from 301 respondents (43% women) through Amazon Mechanical Turk, an online convenience sample wherein workers complete short tasks for money (Berinsky, Huber, and Lenz 2012). Our respondents earned \$0.50 to complete the survey, a rate typical for this setting. Of the 69% of respondents who identified as party members, 65% identified as Democrats and 35% as Republicans; 28% identified as independents; and 3% as “other.” The average age was 37 years. The median education was a bachelor’s degree and the median income was in the bracket \$40,000 to \$49,999. The mean ideology self-placement, recoded to fall between 0 and 1 (higher numbers = more conservative; originally a 7-point scale), was .40 (SD = .15).

Materials

Respondents were asked to think of a specific friend or acquaintance of theirs who shared their political views. They were first asked to imagine that in the next presidential election that this person did *not* vote for their mutually preferred candidate. Given this assumption, they then rated (1) how angry they would be with the other person, (2) how likely they would be to express this anger at the other person, and (3) how likely they would be to attempt to change the other person’s mind. Next they were asked to imagine that this same person *did* vote for their mutually preferred candidate. Given this assumption, they then rated (1) how grateful they would feel toward the other person, (2) how likely they would be to express this gratitude at this other person, and (3) how likely they would be to give positive encouragement to this other person for having voted. Each item was rated on a 7-point scale, which we then re-scaled to range between 0 and 1. The full materials are given at the end of the appendix.

Results

As predicted, people who more strongly felt an emotion were more likely to express the emotion and were more likely to evince other behaviors of social pressure. Importantly, the cause of the emotion and the target of the emotional expression and social pressure were all the same other person—an ingroup member. Participants who felt more anger were more likely to report they would express it ($r = .70, p < .001$) and were more likely to report they would try to convince the other person to vote ($r = .41, p < .001$). Expressing anger and trying to convince the other person to vote were also correlated ($r = .44, p < .001$). Participants who felt more gratitude were also more likely to report they would express it ($r = .72, p < .001$) and were more likely to report they would demonstrate positive encouragement ($r = .65, p < .001$). Expressing gratitude and positive encouragement were also correlated ($r = .78, p < .001$). These results show empirically that *feeling* anger and gratitude correlate with *expressing* those emotions (and engaging in other types of social pressure) toward the person who caused the emotions, and do so in an electoral context.

Although we did not design this study for this purpose, we can also use it to conceptually replicate the primary result from Study 1 in the main paper. Study 1 showed that party members were more likely than independents to feel anger toward ingroup non-contributors and gratitude toward ingroup contributors. (It also investigated responses to outgroup members, but we cannot replicate that with the current data.) In the present data collection, we asked participants to report sufficient information that we can construct a standard measure of *partisan strength*; that is, we know whether participants are pure independents, leaning independents, weak partisans, or strong partisan. (Study 1 did not have responses that allowed us to construct such a variable, thus

for that study we had to rely on the weaker dichotomous measure of party member versus independent.)

We can conceptually replicate Study 1 by seeing whether partisan strength predicts the emotions of anger and gratitude. And it does, as shown in Supplemental Table 2, rows 1 and 4 ($ps < .001$). Note the non-standard presentation in the table—the outcome variables are shown in the rows and the predictor variable is in the columns. Notably, increasingly strong partisans feel more anger or gratitude even when controls for age, income, education, sex, and ideology are included; in fact, the coefficients barely change. Thus, our ancillary data collection replicates the primary result of Study 1.

We also examined whether partisan strength predicts social pressure. As shown in the remaining rows of Supplemental Table 2, it does: Increasingly strong partisans are more likely to express their anger or gratitude, more likely to try to convince a non-voting ingroup member to vote, and more likely to give positive encouragement to a voting ingroup member (all $ps < .05$).

1991 and 1997 ANES Pilot Studies Analyses

Here we use data from the 1991 and 1997 ANES pilot studies to test whether being the target of social pressure (indexed as emotional expression) predicts political participation. First, we use the 1991 ANES pilot study to test whether knowing someone who would be angry at political inaction is associated with greater political activity (Knack 1992; for experimental studies, see Adam and Brett 2015; Reed, DeScioli, and Pinker 2014). We test this prediction with two types of political activity: voting and contributing money to campaigns. Second, we use the 1997 ANES pilot study to test whether encouragement to be politically active (used as a behavioral correlate of gratitude) is associated with greater political activity. If so, this would conceptually replicate previous research showing experimental links between being the target of expression of

gratitude and increased political activity (Panagopoulos 2011; see also Algoe, Fredrickson, and Gable 2013). Although this dataset does not directly measure gratitude, positive encouragement is a behavioral manifestation of gratitude (McCullough, Kilpatrick, Emmons, and Larson 2001). As we showed above, it seems reasonable to use encouragement as a behavioral manifestation of gratitude. In sum, using the ANES pilot studies we tested the critical assumptions that being the target of expressions of anger and gratitude are correlated with political activity.

Method

Participants

We analyzed data from 273 respondents (52% women) from the 1991 ANES pilot study who had full data on all variables used in these analyses. The majority of respondents (91%) were white, with the remaining 9% identifying as black. Of the 69% of respondents who identified as party members, 57% identified as Democrats, 42% as Republicans, and 2% as another party. The average age was 45 years. The median education was 13 years and the median family income was in the bracket \$25,000 to \$29,999. Sixteen respondents were missing data on the measure of contributing money and are thus not included in the analysis of that variable.

We analyzed data from 375 respondents (56% women) from the 1997 ANES pilot study who had full data for all of our variables. The majority (95%) were white, with the remaining 5% identifying as black. Of the 73% who identified as party members, 51% identified as Democrats, 47% as Republicans, and 2% as another party. The average age was 48 years. The median education was 17 years and the median income bracket was \$35,000-\$39,999.

Measures

From the 1991 dataset, for our independent variable we used a question that captured whether respondents had people in their lives who would be angry at a lack of political participation:

“Suppose you did not vote in an election. Do you have any friends, neighbors, relatives, or co-workers who would be disappointed or upset with you (because you did not vote)?” (coded as “yes” = 1 and “no” = 0). Our first dependent variable logically followed from this: a measure of whether the respondent voted in 1990 (coded as “yes” = 1 and “no” = 0); 54% of the sample voted. Our second dependent variable was a measure of whether respondents had contributed financially to politics in one of four ways: by donating \$1 through their tax form, or by giving money to a candidate, to a political party, or to any other political group. Because the mode was to have given nothing in any category (60%), we dichotomized this variable (coded as no contributions = 0, contribution in at least one category = 1). Although this dependent variable is not as closely related to our independent variable, we assumed that having people in your life who would be angry if you did not vote would track anger in other areas of political participation.

From the 1997 dataset, for our independent variable we used a question that captured a behavioral manifestation of gratitude: encouragement. The question read: “People are sometimes asked to call or write to government officials in Washington about a political issue. We're interested in whether this has happened to you this year...tell me if any of these types of people encouraged you to contact your Senator or Representative in Congress or someone in the White House, about a political issue this year.” The survey categorized sources of encouragement in the following categories: family, friends, employer, co-worker, place of worship, other organizations, media, advertisements, and “other.” Our independent variable was the sum of these. For our dependent measure, we used respondents' reports of who they actually contacted: their US House representative, either of their US senators, the White House, a state legislator, or

a local official. Because the majority of respondents contacted no one (66%), we dichotomized this variable (0 = contacted no one, 1 = contacted at least one category).

In addition to demographic variables, in both studies we used an additional control variable of ideology, a 1 to 7 rating scale that ranged from “extremely liberal” to “extremely conservative.” All variables were recoded to be between 0 and 1. Given the dichotomous dependent variables, we used binary logistic regression.

Results

As shown in Supplemental Table 3, having a person in your life who would be angry if you did not vote is associated with a greater likelihood of voting and with a greater likelihood of contributing money to politics (odds ratio = 1.87, $p = .028$). It also increases the likelihood of contributing money (odds ratio = 1.84, $p = .032$). Independent of the effects of anger, being in a political party also increased the likelihood of voting (odds ratio = 2.06, $p = .017$). There was no such trend for contributions ($p = .67$).

Also as shown in Supplemental Table 3, the more sources of encouragement someone had, the more likely they were to contact a political figure. The regression model shows that as a person moves from having no one encourage them to having all possible sources encourage them, they become much more likely to contact a political figure (odds ratio = 442.8, $p < .0001$).

In sum, people are more likely to vote and more likely to contribute money if they know someone who would be angry at political inaction and they are more likely to be politically active if others encourage their activity. Although these results are only correlational, preventing clear inferences about causality, they are consistent with the hypothesis that political action can be mobilized through the emotions of anger and gratitude.

Limitations

In sum, we used 2012 ANES data, data from our TESS study, and an ancillary data collection to show that emotions are linked to social pressure. We also used ANES pilot studies to show that being the target of emotional social pressure is linked to political action. Our results also comport with the past literature in psychology and political science. All of these sources point to the utility of using emotions to understand social pressure. Nonetheless, each of these sources has limitations.

The questions we used from the 2012 ANES do not map on precisely to our own study design: In our study, the expectation would be that participants' emotions would be translated to behavior towards the specific people that elicited those emotions. In the ANES, however, social pressure is presumably being targeted at people in the respondents' social circles, not the presidential candidates directly. Despite this disconnect, however, we emphasize that this analysis supports the general point that feelings of emotion are associated with social pressure.

The past literature we draw from in social psychology is usually about small-scale social interactions, not political activity. Thus, one might wonder if there is a disconnect between its findings and what would be expected in a political context. This is possible. However, we note that research in political science also points to multiple connections between emotions and political participation and activity (Valentino, Brader, Groenendyk, Gregorowicz, and Hutchings 2011; Weber 2013). Moreover, a strength of some of the past work in psychology and political science is that it directly illuminates causality, using experimental manipulations of emotions to affect later behavior.

Our own analysis from our national TESS sample, showing a link between feeling gratitude and overt positive encouragement, has the limitation that the gratitude and positive

encouragement are not being expressed toward the same person. Nonetheless, it again illustrates the more general proposition that emotions are linked to overt behavior to change or reinforce others behavior.

Our ancillary data collection does show a direct connection between feeling an emotion and engaging in social pressure within an electoral context, and specifically with the target of the social pressure being the cause of the emotion. Unlike our TESS study and the ANES studies, however, this ancillary data comes from a convenience sample. Nonetheless, this new data is the most direct test of whether emotions are linked to pressuring the person who caused the emotions.

Altogether, despite the limitations they have, we believe that these sources of data and research support the proposition that emotions are related to overt social pressure. Moreover, because each approach has different strengths, we believe they fill in the gaps of the other approaches (e.g., the past laboratory work helps address causality; the ANES and TESS data come from national samples; the ancillary data directly test the key assumption that feeling an emotion is connected to social pressure at the person inspiring the emotion). Thus, our supplemental data and literature review buttress two claims: emotions are related to overt social pressure and being the target of emotional social pressure is associated with changes in behavior (steps 2 and 3 in our stylized process).

Given this provisional evidence for these second and third steps, our paper focuses on the initial step: What causes people to form an internal motivation to pressure others, as indexed by emotions? We note that it has taken substantial research to get a handle on what leads social pressure to be effective. We anticipate that an adequate analysis of the other steps will require similar amounts of research.

Study 1 Supplemental Information

The present data are part of a larger project (for a fuller project description, open access to the raw data, and details of Knowledge Networks methods see www.tessexperiments.org/data/delton363.html). Of party members, the overwhelming majority were Democrats and Republicans (52% and 46%, respectively). Of independents, 21% identified as liberal, 53% as moderate, and 26% as conservative. The sample was equally split between men and women (460 and 463 people, respectively). The racial/ethnic breakdown was 76.9% white, 9.4% Hispanic, 8.7% black, 2.6% another race, and 2.4% two or more races. The mean age was 47 years. The median participant reported having some college education and having a household income bracket of \$40,000 to \$49,999. We excluded 32 additional participants because they did not answer >50% of the 13 questions composing our larger survey (additional questions in our survey are beyond the scope of the present paper). Given the small number of missing responses (~3%), we elected to use mean-substitution to replace missing values. This allows us to use standard regression methods, making our results easier for others to replicate. We did the following to index ideology. Partisans were scored as conservative if they reported belonging to the Republican or Libertarian Party, or as liberal if they reported belong to the Democratic or Green Party. (Members of other minor parties were not allowed to complete the survey.) Independent respondents self-identified as liberal, conservative, or as moderate. For the ideology variable, conservatives were scored as 0, moderate independents as .5, and liberals as 1.

Mediation

Some readers might see our linking of motivated partisanship to public good perceptions to social pressure as amenable to mediation analysis. However, we do not include a mediation analysis as part of our main results given mediation's controversy within political science

(Bullock, Green, and Ha 2010) and because it is only a small part of our larger argument. We also note that some authors have argued for experimental approaches to mediation: first manipulate the independent variable (here, partisan motivated reasoning; see Study 2) and test whether it affects the proposed mediator (here, public good perceptions), then manipulate the mediator and test whether it affects the outcome variable (here, anger and gratitude) (Spencer, Zanna, and Fong 2005). Although we do not experimentally manipulate public good perceptions here, other research has experimentally manipulated public good perceptions and finds they do cause increased social pressure (Delton, Nemirow, Robertson, Cimino, et al. 2013).

For interested readers we nonetheless conducted mediation analyses. We tested whether public good perceptions mediate the links between party membership and the emotions of anger and gratitude. To do this, we used a bootstrapping approach to test for indirect effects (Preacher and Hayes 2008). Although both the concept and methods of testing for mediation have been controversial (Bullock, Green, and Ha 2010; but see Imai, Keele, Tingley, and Yamamoto 2011), the benefit of the approach we used is that it makes few distributional assumptions, unlike standard approaches for testing mediation (but it still has potential statistical problems associated with bias; Bullock, Green, and Ha 2010). The primary output of this analysis is a confidence interval for the indirect effect. If this confidence interval does not include zero, then there is significant mediation. In all mediation analyses we used bias-corrected and accelerated confidence intervals with 10,000 bootstrapped samples.

We first tested for mediation of anger at ingroup members using all the control variables from the main paper, including anger at outgroup members. There was significant mediation, such that public goods perceptions statistically mediated the connection between partisanship and anger: The point estimate of the indirect effect was .003 with a 95% confidence interval of

.0001 to .0088, which does not include zero. We do note, however, that given the size of the indirect effect public good perceptions clearly did not entirely mediate the link.

We ran an identical mediation analysis, but instead used expectations of personal benefits as the mediator and perceptions of public goods benefits as a control. The indirect effect through personal benefits was not significant (point estimate = .001; 95% CI = -.002 to .007).

We next tested for mediation of gratitude toward ingroup contributors, again using all the control variables, including gratitude at outgroup contributors. As predicted, there was significant mediation, such that public good perceptions mediated the connection between partisanship and gratitude: The indirect effect point estimate was .010 with a 95% confidence interval of .0009 to .0196, which does not include zero. Again, however, we note that public good perceptions do not entirely mediate the link. As before, we tested an alternative mediation model with personal benefits as the mediator. There was no effect (point estimate = .001; 95% CI = -.005 to .009).

Study 2 Supplemental Information

Most participants identified with parties falling roughly in the left-wing: 35% identified as Det Radikale Venstre, 20% as Socialdemokraterne, 13% as Enhedslisten, and 8% as Socialistisk Folkeparti. The remainder identified with right-wing parties: 12% identified as Venstre, 7% as Liberal Alliance, 4% as Det Konservative Folkeparti, and 2% as Dansk Folkeparti.

To test for statistical mediation in Study 2, we used the same bootstrapping approach. We controlled for the relevant emotion directed at an outgroup member. For anger at an ingroup members, the point estimate of the indirect effect was .008 with a 90% confidence interval of .0009 to .0223, which does not include zero. For anger, using expectations of personal benefits as the mediator reveals no significant mediation (point estimate = -.001, 90% CI = -.011 to .037).

For gratitude at an ingroup member, the point estimate of the indirect effect was .0274 with a 90% confidence interval of .0042 to .0574, which does not include zero. For gratitude there was also significant mediation through personal benefits (point estimate = .012, 90% CI = .015 to .038). However, in a model where both personal benefits and public goods benefits were entered as simultaneous possible mediators, only public goods significantly mediated (public goods: point estimate = .026, 90% CI = .004 to .057; personal benefits: point estimate = .001, 90% CI = -.005 to .013).

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Supplemental Table 1

Binary logistic regressions of emotions predicting social pressure (ANES 2012)

	Social pressure as predicted by anger				Social pressure as predicted by pride			
	Democratic Voters		Republican Voters		Democratic Voters		Republican Voters	
	Odds Ratio	B (S.E.)	Odds Ratio	B (S.E.)	Odds Ratio	B (S.E.)	Odds Ratio	B (S.E.)
Angry at Democratic Candidate	1.16	0.15 (0.10)	2.82***	1.04 (0.15)	—	—	—	—
Angry at Republican Candidate	2.45***	0.89 (0.10)	0.98	-0.02 (0.14)	—	—	—	—
Proud of Democratic Candidate	—	—	—	—	2.27***	0.82 (0.13)	0.92	-0.09 (0.13)
Proud of Republican Candidate	—	—	—	—	1.53*	0.42 (0.17)	2.15***	0.77 (0.11)
Income	1.22	0.20 (0.16)	1.17	0.16 (0.20)	1.22	0.2 (0.16)	1.24	0.22 (0.2)
Respondent Sex (1=men, 0=women)	1.09	0.09 (0.09)	1.21	0.19 (0.10)	1.07	0.07 (0.09)	1.31*	0.27 (0.1)
Age	4.10***	1.41 (0.27)	3.39***	1.22 (0.32)	3.83***	1.34 (0.27)	2.76***	1.02 (0.32)
Black	1.76***	0.57 (0.11)	0.71	-0.34 (0.38)	1.53***	0.43 (0.11)	0.79	-0.24 (0.38)
Asian or Pacific Islander	0.94	-0.06 (0.37)	0.50	-0.69 (0.46)	0.82	-0.2 (0.37)	0.55	-0.59 (0.46)
American Indian	1.20	0.18 (0.61)	2.37	0.86 (0.69)	1.11	0.1 (0.6)	1.99	0.69 (0.68)
Hispanic	1.10	0.09 (0.12)	1.05	0.05 (0.18)	1	0 (0.12)	0.99	-0.01 (0.18)
Other or Multiple Races	1.48	0.39 (0.23)	0.88	-0.13 (0.31)	1.47	0.39 (0.23)	0.95	-0.05 (0.31)
Education	1.49**	0.40 (0.17)	1.03	0.03 (0.20)	1.54**	0.43 (0.17)	1.02	0.02 (0.2)
Left-Right Ideology	0.57***	-0.56 (0.21)	4.89***	1.59 (0.31)	0.49***	-0.71 (0.21)	4.9***	1.59 (0.31)
Constant	0.13***	-2.01 (0.23)	0.06***	-2.79 (0.32)	0.14***	-1.95 (0.24)	0.1***	-2.33 (0.31)

Note. All variables scaled to be between 0 and 1. The four bolded cells are the cells with predicted relationships between emotions and social pressure. “White” serves as contrast for the race/ethnicity coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$

Supplemental Table 2

Regressions of partisan strength predicting emotions and social pressure (our own ancillary data collection)

	Partisan Strength			
	No Controls		With Controls	
	B	S.E.	B	S.E.
Anger Felt	0.28***	0.04	0.26***	0.04
Anger Expressed	0.26***	0.05	0.27***	0.05
Convince to Vote	0.23***	0.06	0.21***	0.06
Gratitude Felt	0.21***	0.05	0.19***	0.05
Gratitude Expressed	0.14*	0.06	0.15*	0.06
Positive Encouragement	0.15**	0.06	0.14*	0.06

Note. Each cell comes from a unique OLS regression analysis. In all analyses, the row variable served as the dependent variable and partisan strength as an independent variable. The control variables were age, income, education, sex, and ideology. All variables scaled to be between 0 and 1. $N = 301$. * $p < .05$, ** $p < .01$, *** $p < .001$

Supplemental Table 3

Binary logistic regressions of voting, cash contributions, and contacting politicians as a function of anger and encouragement

	Respondent Voted		Respondent Made Cash Contributions		Respondent Contacted Political Officials	
	Odds Ratio	B (S.E.)	Odds Ratio	B (S.E.)	Odds Ratio	B (S.E.)
Respondent Knew Person Angry at Inaction (yes=1, no=0)	1.87*	0.63 (0.28)	1.84*	0.61 (0.29)	—	—
# Sources Encouraging Respondent to Contact Officials	—	—	—	—	442.79***	6.09 (1.12)
Party Member (=1), Independent (=0)	2.06*	0.72 (0.3)	0.88	-0.13 (0.31)	0.64	-0.45 (0.27)
Income	8.56***	2.15 (0.6)	2.75	1.01 (0.6)	0.50	-0.69 (0.53)
Respondent Sex (1=men, 0=women)	0.74	-0.30 (0.28)	1.67	0.51 (0.29)	1.61	0.47 (0.25)
Age	151.65***	5.02 (0.95)	5.41	1.69 (0.91)	2.36	0.86 (0.75)
Black (=1), White (=0)	0.66	-0.41 (0.47)	0.44	-0.82 (0.57)	0.82	-0.19 (0.54)
Education	1.72	0.54 (1)	103.19***	4.64 (1.12)	19.46**	2.97 (0.98)
Left–Right Ideology	0.60	-0.51 (0.62)	0.89	-0.12 (0.63)	2.42	0.88 (0.53)
Constant	0.02***	-4.2 (1.07)	0.00***	-5.82 (1.14)	0.01***	-4.3 (1.02)

Note. All variables scaled to be between 0 and 1. Data for “Respondent Voted” and “Respondent Made Cash Contributions” from 1991 ANES Pilot Study. Data for “Respondent Contacted Political Officials” from 1997 ANES Pilot Study.

* $p < .05$, ** $p < .01$, *** $p < .001$

Supplemental Table 4

OLS Regression coefficients (standard errors) for anger and public good perceptions as a function of party members versus independents (Study 1)

	Anger at Inactive Ingroup Member			Anger at Inactive Outgroup Member			Public Good Perception (Anger Control)		
	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value
Party Member (=1), Independent (=0)	0.07	0.02	<.001	-0.05	0.02	0.002	0.03	0.01	0.030
Anger at Outgroup Member	0.50	0.03	<.001	—	—	—	-0.02	0.02	0.463
Anger at Ingroup Member	—	—	—	0.43	0.03	<.001	—	—	—
Right-Left Ideology	0.02	0.02	0.201	-0.02	0.02	0.224	0.03	0.01	0.007
Political Commitment	0.04	0.04	0.290	-0.04	0.04	0.271	0.11	0.03	<.001
Past Contributions	0.10	0.04	0.008	0.03	0.03	0.330	0.12	0.03	<.001
Expected Personal Benefits	0.20	0.03	<.001	-0.01	0.03	0.762	0.53	0.02	<.001
Participant Sex (men=1, women=0)	-0.04	0.02	0.016	0.02	0.01	0.107	-0.02	0.01	0.035
Black	-0.06	0.03	0.064	0.02	0.03	0.523	-0.03	0.02	0.186
Hispanic	0.03	0.03	0.367	0.01	0.03	0.572	-0.02	0.02	0.203
2+ Races	-0.02	0.05	0.655	-0.07	0.05	0.144	0.01	0.04	0.878
Other Race	0.02	0.05	0.747	-0.04	0.05	0.348	-0.01	0.04	0.717
Age	0.01	0.05	0.806	-0.04	0.04	0.396	-0.02	0.03	0.560
Education	-0.07	0.04	0.084	-0.01	0.04	0.886	0.03	0.03	0.283
Income	0.00	0.04	0.924	-0.02	0.04	0.501	0.02	0.03	0.434
Constant	0.06	0.04	0.146	0.18	0.04	<.001	0.23	0.03	<.001

Note. All variables scaled to be between 0 and 1. For the race/ethnicity controls, “white” is used as the contrast group and is dummy coded as 0.

Supplemental Table 5

OLS regression coefficients (standard errors) for gratitude and public good perceptions as a function of party members versus independents (Study 1)

	Gratitude for Active Ingroup Member			Gratitude for Active Outgroup Member			Public Good Perception (Gratitude Control)		
	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value
Party Member (=1), Independent (=0)	0.04	0.02	0.015	-0.01	0.02	0.781	0.03	0.01	0.026
Gratitude at Outgroup Member	0.16	0.03	<.001	—	—	—	-0.06	0.02	0.003
Gratitude at Ingroup Member	—	—	—	0.20	0.04	<.001	—	—	—
Right-Left Ideology	0.00	0.02	0.847	-0.03	0.02	0.168	0.03	0.01	0.010
Political Commitment	0.08	0.04	0.037	-0.07	0.04	0.101	0.11	0.03	<.001
Past Contributions	0.13	0.04	<.001	0.01	0.04	0.889	0.12	0.03	<.001
Expected Personal Benefits	0.44	0.03	<.001	0.00	0.04	0.955	0.53	0.02	<.001
Participant Sex (men=1, women=0)	-0.04	0.02	0.018	-0.01	0.02	0.384	-0.03	0.01	0.024
Black	0.04	0.03	0.167	-0.05	0.03	0.100	-0.03	0.02	0.144
Hispanic	-0.01	0.03	0.784	0.04	0.03	0.178	-0.02	0.02	0.240
2+ Races	0.05	0.05	0.273	-0.01	0.06	0.887	0.01	0.04	0.837
Other Race	-0.05	0.05	0.275	-0.02	0.05	0.661	-0.01	0.03	0.684
Age	-0.02	0.05	0.709	-0.06	0.05	0.275	-0.02	0.03	0.496
Education	0.04	0.04	0.284	-0.15	0.04	<.001	0.02	0.03	0.436
Income	-0.01	0.04	0.760	-0.06	0.04	0.128	0.02	0.03	0.520
Constant	0.24	0.04	<.001	0.35	0.05	<.001	0.25	0.03	<.001

Note. All variables scaled to be between 0 and 1. For the race/ethnicity controls, “white” is used as the contrast group and is dummy coded as 0.

Supplemental Table 6

OLS regression coefficients (standard errors) for anger and gratitude as predicted by public good perceptions (Study 1)

	Anger at Inactive Ingroup Member			Gratitude for Active Ingroup Member		
	Coefficient	S.E.	p-value	Coefficient	S.E.	p-value
Public Good Perceptions	0.12	0.05	0.010	0.36	0.04	<.001
Anger at Outgroup Member	0.50	0.03	<.001	—	—	—
Gratitude for Outgroup Member	—	—	—	0.18	0.03	<.001
Right-Left Ideology	0.02	0.02	0.259	-0.01	0.02	0.651
Political Commitment	0.04	0.04	0.294	0.05	0.04	0.206
Past Contributions	0.08	0.04	0.028	0.08	0.03	0.017
Expected Personal Benefits	0.14	0.04	<.001	0.25	0.04	<.001
Participant Sex (men=1, women=0)	-0.04	0.02	0.009	-0.03	0.01	0.042
Black	-0.04	0.03	0.143	0.05	0.03	0.050
Hispanic	0.03	0.03	0.287	0.00	0.03	0.951
2+ Races	-0.03	0.05	0.567	0.05	0.05	0.305
Other Race	0.02	0.05	0.762	-0.05	0.05	0.299
Age	0.03	0.05	0.550	0.00	0.04	0.960
Education	-0.08	0.04	0.045	0.03	0.04	0.419
Income	0.01	0.04	0.841	-0.01	0.04	0.687
Constant	0.06	0.05	0.156	0.16	0.04	<.001

Note. All variables scaled to be between 0 and 1. For the race/ethnicity controls, “white” is used as the contrast group and is dummy coded as 0.

Materials

In this section we give the material used in the reported studies. This Time-sharing Experiments in the Social Sciences (TESS) study tested additional, unrelated hypotheses as well. Full materials can be found at the TESS website at www.tessexperiments.org/data/delton363.html.

To measure perceptions of public goods, participants rated “How much better off would you expect *the nation as a whole* to be if your candidate is elected and his opponent is defeated?” Additional control questions were: Personal benefit: “How much better off would *you personally* expect to be if your candidate is elected and his opponent is defeated?” Political commitment: “My political values are an important reflection of who I am.” Past contributions: “Compared to other people you know, how much support have you given to [your political party/achieve your political values], including time, effort, energy, money, or arguing with others?” All scales were rated on 0 to 100 metrics.

For Party Members

Please imagine you’re in the following situation. There’s going to be a presidential race in the United States. For the past several terms, this political office has belonged to the [OTHER PARTY]. You, your friends, and other members of your political party are very worried and angry because the [OTHER PARTY] has used this office to control national politics and to push their agenda at the expense of the [RESPONDENT’S PARTY]’s agenda. You and your party want to win back control of the White House so that you can achieve your political goals and advance your agenda.

[For all questions, sex of the hypothetical voter was randomized and they were given a name]

In-party non-contributor anger

[VOTER NAME] did not spend any time, effort, or money trying to get your candidate elected and did not even bother to go out and vote. Given that you're a [**PARTY ADJECTIVE: DEMOCRAT/REPUBLICAN**], how **angry** would you feel towards [him/her]?

0	50	100
Not at All Angry	Moderately Angry	Very Angry

In-party contributor gratitude

[VOTER NAME] spent a lot of time, effort, and money trying to get your candidate elected and made sure to go out and vote. Given that you're a [**PARTY ADJECTIVE**], how **grateful** would you feel towards [him/her]?

0	50	100
Not at All Grateful	Moderately Grateful	Very Grateful

Out-party non-contributor anger

[VOTER NAME] did not spend any time, effort, or money trying to get the candidate from the [OTHER PARTY] elected and did not even bother to go out and vote. Given that you're a [**PARTY ADJECTIVE**], how **angry** would you feel towards [him/her]?

0	50	100
Not at All Angry	Moderately Angry	Very Angry

Out-party contributor gratitude

[VOTER NAME] spent a lot of time, money, and energy trying to get the candidate from the [OTHER PARTY] elected and made sure to go out and vote. Given that you're a [PARTY ADJECTIVE], how **grateful** would you feel towards [him/her]?

0 50 100

Not at All Grateful Moderately Grateful Very Grateful

For Independent Voters

Please imagine you're in the following situation. There's going to be a presidential race in the United States. For the past several terms, this political office has belonged to presidents who do not share your political values. You, your friends, and other people who share your political values are very worried and angry because the previous presidents have used this office to control national politics and to push their agenda at the expense of an agenda in line with yours. You and others with your political values want to win back control of the White House so that you can achieve your political goals and advance your agenda.

In-group non-contributor anger

[VOTER NAME] did not spend any time, effort, or money trying to get your candidate elected and did not even bother to go out and vote. Given that you're an independent, how **angry** would you feel towards [him/her]?

0 50 100

Not at All Angry Moderately Angry Very Angry

In-party contributor gratitude

[VOTER NAME] spent a lot of time, effort, and money trying to get your candidate elected and made sure to go out and vote. Given that you're an independent, how **grateful** would you feel towards [him/her]?

0 50 100
Not at All Grateful Moderately Grateful Very Grateful

Out-party non-contributor anger

[VOTER NAME] did not spend any time, effort, or money trying to get the candidate you oppose elected and did not even bother to go out and vote. Given that you're an independent, how **angry** would you feel towards [him/her]?

0 50 100
Not at All Angry Moderately Angry Very Angry

Out-party contributor gratitude

[VOTER NAME] spent a lot of time, money, and energy trying to get the candidate you oppose elected and made sure to go out and vote. Given that you're an independent, how **grateful** would you feel towards [him/her]?

0 50 100
Not at All Grateful Moderately Grateful Very Grateful

Material for Ancillary Data Collection

Please think of a friend or acquaintance of yours, one who shares your political views and generally supports the same candidates for president as you.

How angry would you feel toward this person if they did NOT vote for your candidate in the next presidential election?

- ☐ Not at all angry (1)
- ☐ A little angry (2)
- ☐ Fairly angry (3)
- ☐ Moderately angry (4)
- ☐ Pretty angry (5)
- ☐ Very angry (6)
- ☐ Extremely angry (7)

How likely would you be to express this anger at them?

- ☐ Very unlikely (1)
- ☐ Somewhat unlikely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly likely (5)
- ☐ Somewhat likely (6)
- ☐ Very likely (7)

How likely would you be to try to convince them to change their mind and vote for your candidate?

- ☐ Very unlikely (1)
- ☐ Somewhat unlikely (2)
- ☐ Slightly unlikely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly likely (5)
- ☐ Somewhat likely (6)
- ☐ Very likely (7)

Continue to think of this friend or acquaintance of yours, one who shares your political views and generally supports the same candidates for president as you.

How grateful would you feel toward this person if they DID vote for your candidate in the next presidential election?

- ☐ Not at all grateful (1)
- ☐ A little grateful (2)
- ☐ Fairly grateful (3)
- ☐ Moderately grateful (4)
- ☐ Pretty grateful (5)
- ☐ Very grateful (6)
- ☐ Extremely grateful (7)

How likely would you be to express this gratitude toward them?

- ☐ Very unlikely (1)
- ☐ Somewhat unlikely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly likely (5)
- ☐ Somewhat likely (6)
- ☐ Very likely (7)

How likely would you be to give them positive encouragement, such as kind words or gestures of appreciation, for voting for your candidate?

- ☐ Very unlikely (1)
- ☐ Somewhat unlikely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly likely (5)
- ☐ Somewhat likely (6)
- ☐ Very likely (7)