The Role of Anger in the Biased Assimilation of Political Information

Elizabeth Suhay (*American University, Washington, D.C.*)

Cengiz Erisen (*Yeditepe University, Istanbul*)

October 3, 2017

Abstract

Political psychologists have established that politically motivated reasoning is a common phenomenon; however, the field knows comparatively less about the psychological mechanisms that drive it. Drawing on advances in the understanding of the relevance of emotion to political reasoning and behavior, we argue that anger likely plays a major role in motivating individuals to engage in the *biased assimilation* of political information—an evaluative bias in favor of information that bolsters one's views and against information that undercuts them. We test this proposition with two online studies, the second of which includes a quasi-representative sample of Americans. The studies support our expectations. Individuals felt more negative emotions toward arguments that undermined their attitudes and positive emotions toward arguments that confirmed them; however, anger was nearly alone in fueling biased reactions to issue arguments.

Word count: 8,996

RUNNING HEAD: The Role of Anger in Biased Assimilation

KEY WORDS: Biased assimilation; motivated reasoning; emotion; anger; political attitudes

[W]ithout a willingness to admit new information, and concede that your opponent might be making a fair point…then we're going to keep talking past each other, and we'll make common ground and compromise impossible. –President Barack Obama, Farewell Address, January 10, 2017

In his Farewell Address to the nation, President Obama declared to the millions of people watching and listening that one of the greatest challenges facing the United States today is—to use the technical term—the "biased assimilation" of facts and arguments. Political scientists, psychologists, and other social scientists have long known that most people are loathe to change strongly held beliefs, whether factual or evaluative (see especially Kunda, 1990). When faced with information that contradicts their beliefs—relative to information that supports them—people tend to judge the information as lower quality and generate more counterarguments and fewer supporting arguments (e.g., Kahan, 2011; Lodge and Taber, 2013; Lord, Ross, and Lepper, 1979; Munro, Ditto et al., 2002; Redlawsk, Civettini, and Emmerson, 2010). In this way, people can avoid adjusting their beliefs or opinions in response to new information.

President Obama was not calling attention to an arcane academic discussion in his address, however. Owing to the unusually contentious and polarized 2016 presidential election, the subject of political bias had entered public discourse. Americans appeared to be unusually stubborn in their support for one candidate and set of beliefs, and to some extent aware of their intransigence as well (Aschwanden, 2016). From a normative perspective, such bias is important and troubling. It implies that citizens' evaluations of information do not reflect accepted ideals of democratic theory—that citizens should consider politically relevant facts and arguments in an open-minded, impartial

manner (e.g., Gutmann and Thompson, 2004). These ideals are not just ends in themselves. As Obama argued, they make political deliberation and compromise possible.

Yet, for all of the concern given to political bias in the acceptance of information—and to politically motivated reasoning more generally—relatively few researchers have investigated *why* the phenomenon occurs, and is so common. In this article, we argue that—with some important exceptions—political psychologists have paid insufficient attention to a key aspect of the biased assimilation of political information: emotion. Speaking generally, all reasoning is motivated in some way (Lodge and Taber, 2013).[1] Emotions are critical components of human motivation (Lazarus, 1991) and, thus, should be incorporated into the study of reasoning (Marcus, Neuman, and MacKuen, 2000). But what makes reasoning *biased*? Building on established theories of how emotions function and prior studies investigating the links between emotions and motivated reasoning, we posit that, among the emotions thought to be integral to political reasoning, anger plays a unique role in driving biased assimilation because it orients thinking and action toward defending the self (and allies) and attacking opponents (e.g., see Lazarus, 1991).

Examining the potential role of anger in the biased assimilation of political information is demanding. We must first replicate previous scholars' finding of politically biased assimilation. Then, within the same framework, we must test whether anger is at least partially responsible for the

---

[1] While, technically, all reasoning is motivated, scholars distinguish between *directional* motivation and *accuracy* motivation (e.g., Kunda, 1990; Leeper and Slothuus, 2014). When scholars use the term "motivated reasoning," they nearly always mean "directional motivated reasoning."

bias. Finally, we must also assess whether anger's role is greater than that of other emotions. Further, to increase the study's external validity, these tests would ideally be carried out with respect to different political issues and in different samples of people. We achieve these goals in two online studies of U.S. citizens, the first conducted with a convenience sample via Amazon Mechanical Turk and the second with a quasi-representative sample via Qualtrics Panels. Our findings show that politically biased assimilation of information is a robust phenomenon that is, to a substantial degree, fueled by angry reactions to information that contradicts one's political views.

Motivated Reasoning and Biased Assimilation

Generally speaking, motivated reasoning is a phenomenon whereby people engage in cognitive processes in order to advance some goal other than the formation of accurate beliefs (Kunda, 1990). Perhaps the most studied type of motivated reasoning is what Taber and Lodge (2006) refer to as "motivated skepticism"[2] and what others have called "biased assimilation" (Kahan, 2011; Lord, Ross, and Lepper, 1979; Munro, Ditto et al., 2002): resisting information that undermines one's factual beliefs or attitudes while giving information that bolsters one's beliefs or attitudes a free pass. When confronted with information that challenges their views, people generate more counterarguments and generally judge the information to be low quality relative to information that bolsters their priors (Redlawsk, Civettini, and Emmerson, 2010; Taber and Lodge, 2006). In some cases, this effort to counter "uncongenial" information is so powerful that it leads to boomerang

---

[2] According to Lodge and Taber, the two subprocesses of "prior attitude effect" and "disconfirmation bias" fit under this label (Lodge and Taber, 2013, p. 152; Taber and Lodge, 2006).

effects, whereby an individual's original viewpoint becomes even stronger (Hart and Nisbet, 2012; Lord, Ross, and Lepper, 1979; Redlawsk, 2002; Taber and Lodge, 2006).

In the last decade or so, scholarly interest in motivated reasoning in the political sphere has increased, no doubt due to increasingly polarized and ideological electorates in many nations, such as the U.S. Among other things, this growing literature has empirically established what we refer to as "politically biased assimilation" (ideological bias in the evaluation and acceptance of *politically relevant* information) (Kim, Taber, and Lodge, 2010; Nyhan and Reifler, 2010; Redlawsk, 2002; Taber, Cann, and Kucsova, 2009; Taber and Lodge, 2006); extended this framework to politically relevant scientific beliefs (Kahan, 2013; Kraft, Lodge, and Taber, 2015); and explored *partisan* bias specifically (Bolsen, Druckman, and Cook, 2014; Leeper and Slothuus, 2014; Petersen, Skov, Serritzlew, and Ramsøy, 2013; Weeks, 2015).

The Relevance of Emotion to Biased Assimilation

In contrast to these achievements in documenting the reach of political bias in reasoning, scholarship focused on its underlying mechanisms remains at a relatively nascent stage. Lodge, Taber, and co-authors have arguably made the most progress in understanding the relevant psychological mechanisms (see especially Erisen, Lodge, and Taber, 2014; Lodge and Taber, 2005). The core phenomena in their theoretical framework are "hot cognition" and "affective contagion." When a person encounters a political stimulus (such as news about a politician), a subconscious "match" between the stimulus object and the object in memory occurs. Positive or negative affect associated with the object in memory is then automatically aroused. Further, associated objects in long-term memory with similar affective valences are also activated. The result is a set of associated

considerations (e.g., attributes of a politician) with a similar valence (positive or negative) that have become salient in a person's working memory without their conscious awareness or control (see Lodge and Taber, 2013, for a detailed overview).

This increases the likelihood of biased assimilation of political information for two reasons. First, because people confronted with a political stimulus will nearly instantaneously have in working memory a set of considerations biased in favor of their initial viewpoint, they are better equipped to counterargue uncongenial information than congenial information. A second, distinct point is that the overall positive or negative valence of the considerations in mind sets in motion cognitive processing goals, such that new information is evaluated more favorably if it reflects the valence of the considerations. (On these points, see Redlawsk, 2002; Lodge and Taber, 2013, especially chapters 2 and 7; Taber, Cann, and Kuscova, 2009.)

This detailed psychological theory explains important implicit mechanisms underlying the generation of summary beliefs and opinions about political objects and offers one explanation for the biased assimilation of incoming information. However, Lodge and Taber (2013) stop short of considering how more conscious psychological processes may contribute to motivated reasoning, including discrete emotions which require some degree of cognitive appraisal (see especially pp. 18-22). We do not disagree that preconscious affect matters in the way Lodge and Taber describe; however, building on recent work connecting motivated reasoning to emotion, we argue that differentiated emotions—in particular, anger—also contribute to biased assimilation.

Motivated reasoning is not solely a preconscious process (Erisen, Redlawsk, and Erisen, forthcoming). Counterarguing, rationalization, and biased information seeking all involve some

cognitive awareness and control. The question is, is this more effortful processing set in motion only by preconscious positive/negative affect, or might discrete emotions emerging later also play a role? Appraisal theorists argue that the experience of emotion is an unfolding process. An automatic, simple affective response may occur initially in response to a stimulus; however, once cognition becomes involved, the emotional experience becomes more differentiated (Lazarus, 1991; Smith and Ellsworth, 1985). Given this, and the fact that many discrete emotions have been shown to influence decision-making, it seems unlikely that emotions are irrelevant to motivated reasoning. Three emotions are consistently emphasized in the political psychology literature as fundamental to political cognition and behavior: anxiety/fear, enthusiasm, and anger (see Brader and Marcus, 2013; Huddy, Feldman, and Cassese, 2007). These emotions have distinct antecedents and effects, which we discuss below. And, as we will argue, it is *anger* that likely plays a particularly important role in driving politically biased assimilation.[3]

We begin by discussing anxiety. There is little question that individuals exposed to arguments that undermine their valued issue positions will feel threatened and, therefore, some anxiety. The question is, what are the likely effects of anxiety in this circumstance? This emotion is a key

---

[3] Political psychologists discussing the three emotions we focus on here have drawn on both more neuroscientific accounts of emotion, which emphasize preconscious affect and theorize fewer differentiated affective processes (e.g., Gray, 1994), and appraisal models, which emphasize the importance of cognition as well as culture in creating the complex array of emotions recognized by psychologists (e.g., Lazarus, 1991). However, the two approaches are not incompatible nor irrelevant to one another. Preconscious affect influences more conscious and differentiated emotions, which occur later in the processing chain.

component of Affective Intelligence Theory (AIT) (Marcus, Neuman, and MacKuen, 2000). Building on neuroscientific theories of preconscious affect, scholars working within the AIT framework argue that anxiety motivates open-minded learning from the contemporary information environment (Brader, 2006; Groenendyk, 2016; MacKuen, Wolak, Keele, and Marcus, 2010; Marcus, Neuman, and MacKuen, 2000). With this in mind, anxiety might *reduce* biased assimilation of information. This said, some researchers have questioned AIT scholars' survey-based findings (see Ladd and Lenz, 2011). In an experimental context, the role of anxiety in learning is better established but still inconsistent (e.g., Redlawsk, Civettini, and Lau, 2007).

One explanation for this inconsistency is that whether anxiety predicts open-minded learning (or even learning at all) depends on whether open-minded learning is necessary for coping with a perceived threat. First, minor threats that provoke only mild anxiety are easily (and often) ignored (Albertson and Gadarian, 2015, p. 10; Redlawsk, Civettini, and Lau, 2007). Second, anxiety in response to specific threats (as opposed to uncertainty in general) tends to be focused and self-protective—oriented toward sizing up a threat and figuring out how to escape or eliminate it (see Albertson and Gadarian, 2015, for empirical examples). Along these lines, Valentino, Banks, Hutchings, and Davis (2009) conclude in their study of motivated selectivity: "If balanced information is useful [to countering threat], anxious citizens will seek it out. If not, anxiety is likely to lead people to avoid counterattitudinal views" (p. 593). In sum, previous studies indicate that anxiety does not appear to consistently increase or decrease bias.

Turning to a positive emotion, enthusiasm is aroused when people experience or anticipate success achieving their goals (Brader, 2006; Marcus, Neuman, and MacKuen, 2000; see also Lazarus, 1991, who calls this emotion "happiness"). It should arise in response to likeminded

political argumentation. Enthusiasm encourages reliance on familiar patterns of political opinion rather than contemporary information (Brader, 2006; Marcus, Neuman, and MacKuen, 2000), an expectation born out in a recent experimental study of evaluations of President Obama (Groenendyk, 2016).[4] This would suggest a role for enthusiasm in politically biased assimilation. All else equal, a happy mood or enthusiastic response to a political stimulus will encourage people to stick with their initial political perspective. This said, it is well-established that positive emotions are "usually weaker in intensity and impact" than negative ones (Lazarus, 1991, p. 264), a general conclusion that is also an important element of Prospect Theory (Tversky and Kahneman, 1992). With this in mind, enthusiasm may encourage political bias but that influence may be modest.

A Unique Role for Anger in Biased Assimilation

According to some models, anger combines elements of anxiety and enthusiasm (Gray, 1994; also see Huddy, Feldman, and Cassese, 2007). People experience anger only when their goals have been threatened, including when their values (Mullen and Skitka, 2006) or political opinions (Redlawsk, Civettini, and Lau, 2007) are challenged. However, unlike in cases of anxiety or fear, additional judgments have been made: a person feels capable of countering the threat; and a person feels the threat is an illegitimate one (see especially Lazarus, 1991; Smith and Ellsworth, 1985). Anger may also be more likely to occur in response to more familiar (as opposed to novel) threats (MacKuen, Wolak, Keele, and Marcus, 2010).

---

[4] An important caveat is that enthusiasm may encourage information search; however, such searching is not necessarily associated with accurate learning (e.g., Redlawsk, Civettini, and Lau, 2007).

In terms of effects, anger is associated with superficial reasoning and reliance on preexisting heuristics (Huddy, Feldman, and Cassese, 2007). It decreases people's interest in learning about candidates with whom they disagree (Redlawsk, Civettini, and Lau, 2007) and motivates them to seek out information that supports their point of view (MacKuen, Wolak, Keele, and Marcus, 2010). Anger also motivates people to attack (physically or metaphorically) the person or thing perceived as unfairly blocking their goals (Lazarus, 1991; Young, Tiedens, Jung, and Tsai 2010). In their experimental study of reactions to courtroom verdicts, Mullen and Skitka (2006) found that anger in response to verdicts that "challenged perceivers' moral convictions" (p. 640) appeared to drive perceptions that the legal proceedings had been conducted unfairly. Finally, Young, Tiedens, Jung, and Tsai (2010) found that anger in a political context makes people more likely to seek out *disconfirming* information in order to counterargue it. In sum, anger causes people to both lean heavily on their priors and respond in a hostile manner toward people and ideas that undermine them. The case for anger as a major predictor of politically biased assimilation is compelling.

To properly test this presumption regarding anger's unique effects, a study must assess the influence of all three of these emotions simultaneously, as emotions tend to be correlated. To our knowledge, no previous biased assimilation research has done so. This said, at least two studies have made some headway. Redlawsk, Civettini, and Emmerson (2010) find that negative affect in general[5] increases as individuals are exposed to more information that paints their preferred candidate in a bad light. Initially the negative affect coincides with resistance to incongruent information; however,

---

[5] In this work, participants were asked the extent to which they felt: distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid. The affect measure is the average of these responses.

at a certain "tipping point," negative affect decreases and participants reconsider their initial preference. Munro, Ditto, et al. (2002) examine the role of anger as well as positive affect (happiness, pleasure) in the context of a U.S. presidential debate. They find that participants' pre-debate candidate preferences predicted (A) evaluations of who won the debate, and (B) biased cognitive elaborations (thoughts and feelings) about the candidates. Relative anger toward the less preferred candidate, and relative happiness about the more preferred candidate, mediated these effects. It is also worth noting that participants' pre-debate expectations of who the winner would be did *not* predict (A) and (B) above, leading the researchers to conclude that biased assimilation is largely an affective process, not a cognitive one.

While these two studies are valuable in their demonstration of the role of emotion in motivated reasoning, notice that a common limitation is that they cannot adjudicate between the simple positive/negative valence hypothesis of Lodge and Taber (2013) and our contention that a specific negative emotion—anger—increases the likelihood of biased assimilation.

Our Studies

We conducted two online studies. In each, we sought to replicate the basic structure of the biased assimilation frameworks found in classic studies by Taber and Lodge (2006) and Munro, Ditto, et al.

(2002).[6] Participants' attitudes are measured on a political topic; they are exposed to either an attitudinally congenial or uncongenial argument; they are then given the opportunity to evaluate the argument and to counterargue it (and, in Study 2, offer supportive arguments). The process is repeated for the argument representing the other side of the issue at hand. In our study, we also measure participants' emotional reactions following the issue arguments.

Hypothesis 1 is that we will replicate previous biased assimilation studies: When confronted with arguments reflecting both sides of an issue, study participants will be more likely to (a) rate the quality of the argument that supports their point of view as higher than the opposing argument, (b) counterargue the opposing argument more (relative to the supporting one), and (c) bolster the supporting argument more (relative to the opposing one).

Hypothesis 2: A substantial portion of the observed political bias will be driven by participants' angry reactions to opposing arguments. In other words, anger will partially mediate the relationship between the participants' initial issue attitudes and their (a) quality ratings of the arguments, (b) counterarguments, and (c) supporting arguments.[7]

---

[6] Our research designs most closely resemble those used by Lodge and Taber and colleagues, as they also focus on issue attitudes. For more details, see Appendix D. This said, our attention to emotional reactions is similar to Munro, Ditto, et al. (2002).

[7] To be clear, a key reason we expect partial mediation is because we accept Lodge and Taber's argument that hot cognition and affective contagion together contribute to motivated reasoning (via biased considerations in

Hypothesis 3: The mediating role of anger will be greater than that of enthusiasm.

Hypothesis 4: We do not expect a mediating role for anxiety.

Study 1

Sample & Study Design

We fielded Study 1 in March 2016 through Amazon Mechanical Turk (MTurk). Our sample includes 335 MTurk workers who participated in an online survey through Qualtrics.[8] All study participants were at least 18 years of age and resided in the U.S. at the time of the study. 48% were Democrats, 17% Republican, and 33% Independent. 46% were female, and 73% white. The median level of education was a two-year college degree. The median age was 32 in this sample.

In the first section of the study, participants responded to questions measuring their party identification and a number of measures intended for a separate article.[9] In the next section,

---

working memory) regardless of what—and whether—emotions follow. We discuss this further in the Discussion and Conclusion.

[8] Following Berinsky, Huber, and Lenz (2012), we only allowed MTurk workers to participate if they had an acceptable rating based on previous tasks (our threshold was >90%).

[9] These measures include political interest and knowledge as well as individual differences (i.e., personality traits). Note that we re-ran all models referenced in this manuscript controlling for these measures; changes to the coefficients of interest (i.e., prior attitude, emotion) were small—most ranging from nearly 0 to .02— and not statistically significant. These null findings hold for Study 2 when similar controls are included.

participants responded to demographic questions followed by measures of the three issue attitudes at the center of the study: abortion, economic inequality, and illegal immigration. We chose to represent several issues to strengthen the external validity of our study. These issues were chosen in particular because they are both salient and contentious in contemporary political discourse. In addition, each maps onto an important cleavage in American politics: disagreements over social issues (legality of abortion); disagreements over economic issues (economic inequality); and disagreements related to the increasing diversity of American society (illegal immigration).

Next, participants were randomly assigned to one of the three issues. They received one paragraph-length argument for the "liberal" side and one for the "conservative" side, in random order (see Appendix A for the arguments).[10] Immediately after reading one side of an issue, participants responded to a multiple choice manipulation check to ensure that they understood the main point of the argument. In our empirical analyses below, we only include those who answered both manipulation checks correctly.[11] After the manipulation check item, we measured participants' self-assessed emotional responses to the argument, gauged their perceptions of its quality, and then asked them to provide counterarguments (in that order). After these questions, participants received the

---

[10] Research assistants unaware of the goals of the study researched common issue arguments found online (in media articles, think tank reports, advocacy sites, etc.). We crafted the arguments based on these findings, working to create arguments that were similar in terms of content and strength. We also assessed argument equivalence empirically by comparing each argument's mean quality rating to the opposing argument. Each pair's ratings are statistically equivalent.

[11] We detected no systematic bias with respect to who missed the manipulation check. See Appendix C.

other side of the issue and responded to the same set of follow-up questions. By randomizing the order of the conservative and liberal arguments, we control for possible order effects.[12] After completing the study, participants were debriefed.

Variables

Dependent Variables

In Study 1, we gauge motivated reasoning with two dependent variables. These measures are (1) quality ratings of the issue arguments, and (2) counterarguments to the issue arguments.

Perceived argument quality was measured with two questions (asked in reference to the conservative and liberal arguments separately). One question asked participants to evaluate the quality of the argument by assigning a letter grade, ranging from A+ to F. The second asked participants to report how strong or weak the argument was, on a scale of extremely strong (1) to extremely weak (7). As in previous motivated reasoning studies, participants were encouraged to be objective and leave their own opinions to the side. Given the bivariate correlations of .75 or above for these two items, we combined them into a scale by taking their mean. The scale was reverse-scored, so that high numbers signify higher (perceived) quality. We also asked participants to list any

---

[12] In the final section, to gauge whether attitude polarization occurred in response to reading the issue arguments, the attitude measures presented at the beginning of the study were presented a second time. We do not find evidence of attitude polarization between the pre-test and post-test. Previous research suggests such "boomerang effects" are in fact uncommon (Lodge and Taber, 2013). Note that the same null effect occurs in Study 2. We do not comment further on these measures.

thoughts they had that opposed the argument they had just read in open-ended response boxes (see also Erisen, Redlawsk, and Erisen, forthcoming). For each side, participants could type up to five different counterarguments.

We use these raw measures of quality and counterarguing to create dependent measures, which are comparative. Bias is a comparative concept and cannot be captured by examining a person's response to just one argument that favors or undermines his or her point of view. Some people will consistently assign higher quality ratings, or counterargue more, making it difficult to separate out the influence of political bias from idiosyncratic factors. The more accurate gauge of bias is whether people score the argument on "their" side as higher quality than the argument on the "other" side; whether they counterargue the "other" side more than "their" side; etc.

Thus, we created a difference measure for all of our dependent variables, which were recoded to range from -1 to 1. The variables are scored such that positive values represent rating the conservative argument better than the liberal one (or offering more counterarguments against the liberal argument than the conservative one) and negative values represent rating the liberal argument better than the conservative one (or offering more counterarguments against the conservative argument than the liberal one). Zero on these scales means one scores both sides equally. See Table 1 for a more detailed description of the dependent variables. This operationalization offers the proper theoretical test of our expectations and has the added advantage of generating measures with considerable variation on the underlying construct of interest, allowing us to employ OLS multiple regression.

[Table 1 here]

Emotion Measures

After reading each argument, participants were asked the extent to which they experienced nine different emotions (three for each of the three key emotion types of interest). We asked "How does the argument you just read make you feel?" (see Marcus, Neuman, and MacKuen, 2015). Participants then used a slider to indicate their level of emotion. The emotions about which we asked included three in the anger domain (angry, outraged, disgusted); three in the anxiety domain (anxious, nervous, worried); and three in the enthusiasm domain (enthusiastic, hopeful, proud) (see also Weeks, 2015). The Cronbach's alpha for the three items that composed a single emotion dimension was above 0.8 for all domains. Thus, we combined each three-item battery into a scale by taking the arithmetic mean for each participant. Note that this resulted in *six* emotion scales total: anger in response to the conservative and liberal arguments (separately), and so on for enthusiasm and anxiety.

To carefully test our expectations of emotion mediation, and similar to Munro, Ditto, et al. (2002), we again generated difference measures. This allows us to ensure that idiosyncratic response patterns among participants do not contribute error to the analyses. To create the anger measure, we subtracted anger against the conservative argument from anger against the liberal argument. We performed the same calculation for anxiety. For the enthusiasm ratings, we subtracted enthusiasm for the liberal argument from enthusiasm for the conservative argument. These calculations generate three emotion difference measures, which again range from -1 to 1. Positive numbers represent more

positive (less negative) emotions in response to the conservative arguments and negative numbers represent more positive (less negative) emotions in response to liberal arguments.[13]

Independent Variables

Our primary independent variable is the person's prior attitude on a particular issue (abortion, economic inequality, or illegal immigration), each measured with three items early in the study. These items asked participants to report whether they were in favor of, or opposed to, legal abortion, government attempts to decrease economic inequality, and efforts to reduce illegal immigration. We recoded all items such that higher scores represented the conservative position on the issue. All three items (for each issue separately) loaded strongly on a single dimension, allowing us to create a composite measure by taking the arithmetic mean, thus reducing measurement error. See Appendix A for question wording.

In addition to these primary indicators, we control for party identification, age, race, gender, education, and religiosity in our models. The partisanship scale ranged from Strong Democrat (1) to Strong Republican (7). The religiosity scale ranged from never (1) to more than once a week (7). The education item ranged from less than high school (1) to post-graduate degree (10).

All of the above independent variables have been rescaled to range from 0 to 1.

---

[13] There is more than one way to assess the role of emotion in biased assimilation. We discuss the benefits and drawbacks of our approach, as well as an alternate specification, in the Discussion and Conclusion.

Results

We use mediation analysis in both studies, incorporating tests suggested by Imai, Keele, Tingley, and Yamamoto (2011; also see Imai, Keele, and Tingley, 2010) that address well-known limitations of mediation analyses (see Bullock, Green, and Ha, 2010; Imai, Keele, Tingley, and Yamamoto, 2011). The three general regression equations are as follows:

EQ 1. $M = \alpha + \beta X_{attitude} + \beta Z_{controls} + \epsilon$

EQ 2. $Y = \alpha + \beta X_{attitude} + \beta Z_{controls} + \epsilon$

EQ 3. $Y = \alpha + \beta X_{attitude} + \beta M_{anger} + \beta M_{anxiety} + \beta M_{enthusiasm} + \beta Z_{controls} + \epsilon$

where Y represents the participant's position on the specific dependent variable being examined (the Quality Rating, Counterarguments, or Supporting Arguments measure), $X_{attitude}$ represents the participant's attitude on the issue to which s/he was assigned (measured in the pre-test), M represents the participant's expressed emotion (anger, anxiety, or enthusiasm), and Z represents a vector of control variables. Again, the dependent variables and the emotion measures are difference measures. Note that we conduct mediation analysis—as opposed to, e.g., a moderation analysis—because we are examining emotional states that *stem from* a person's issue position (in the context of reading a political argument). This emotional reaction is the presumed bridge linking prior attitude to biased evaluation.

We first discuss results associated with Equation 2 because the coefficient on the pre-test attitude measure assesses participants' overall level of biased assimilation and represents the "total effect" in the language of mediation analysis. Note that, to increase power, we have pooled the three issue groups—those assigned to abortion, economic equality, and illegal immigration. Each model

includes a categorical variable representing the issue to which each participant was assigned as a control, and standard errors are clustered to account for correlated errors within issue groups.[14] Upon regressing the perceived quality measure and the counterargument measure on pre-test issue attitudes and the various control measures, we find that attitudes are strongly associated with both dependent variables, with coefficients of approximately 1 (respectively, $b_{attitude}$=0.98 and $b_{attitude}$=1.1, p<.001). Thus, on average, those at the top of the attitude scale (1, most conservative) differ from those at the bottom of the attitude scale (0, most liberal) on the dependent variables by half of the DVs' scale (-1 to 1). See Appendix A for the full set of models. This supports *Hypothesis 1*, the replication hypothesis.

The relevant path coefficients drawn from Equations 1 and 3 are represented in Figure 1. Holding a relatively conservative position on the relevant issue in the pre-test "predicted" greater anger ($b_{attitude}$=1.25) and anxiety ($b_{attitude}$=0.61) in response to the liberal argument and greater enthusiasm ($b_{attitude}$=1.1) in response to the conservative argument (all p<.001). Controlling for pre-test attitude, relatively greater anger in response to the liberal argument and enthusiasm in response to the conservative argument were both associated with higher quality ratings for the conservative argument (b_{anger}=0.32, p<.001; $b_{enthusiasm}$=0.24, p<.001). Relatively greater anger in response to the liberal argument was also associated with more counterarguments against the liberal argument (b_{anger}=0.39, p<.001). Enthusiasm was unrelated to counterarguments, and anxiety was related to

---

[14] Given that we examine three well-worn topics about which many people have strong, affect-laden opinions, we do not anticipate mediation effects to differ across issues, and they are indeed largely consistent. Key mediation results for each issue group separately are available in Appendix A.

neither DV. These results suggest a mediating role for anger and enthusiasm, but not anxiety.[15]

Finally, controlling for emotions, pre-test attitudes were associated with both dependent variables

($b_{attitude}$=0.31, p<.05; $b_{attitude}$=0.59, p<.001, respectively), meaning any mediation through emotions

will necessarily be *partial* mediation.

[Figure 1 here]

We conducted six formal mediation tests to gauge the size and statistical significance of the

indirect effects of anger, enthusiasm, and anxiety on the two dependent variables using the *R* package

mediation (Imai, Keele, and Tingley, 2010). For analyses with non-discrete dependent variables, this

package replicates traditional mediation tests based on the above equations (see Baron and Kenny,

1986; MacKinnon, Warsi, and Dwyer, 1995) and allows for sensitivity analyses relevant to the

"sequential ignorability assumption" (Imai, Keele, and Tingley, 2010), i.e., the assumption that the

researcher has not ignored a phenomenon correlated with both the mediator and the outcome variable

that is in fact the true cause linking stimulus to dependent variable. We assess the mediating role of

each emotion independently, controlling for the other two emotions.

Table 2 displays the results from the two formal mediation tests for anger. The statistical package

assesses the direct effect of prior issue attitude on the dependent variable (ADE) and the indirect

effect of anger (ACME) while holding constant anxiety and enthusiasm as well as the control

---

[15] An informal gauge of mediation is simply to add measured emotions to Equation 2 (see Equation 3) and see

whether and how much the coefficient on prior issue attitude decreases in size. We see that the coefficients on

the issue attitude variable decrease markedly (differences all at least p<.05).

measures. The indirect effect of anger is approximately 0.4 (p<.001, 54% of total effect) when Quality Rating is the DV and 0.5 (p<.001, 49% of total effect) when Counterarguments is the DV. Repeating the analysis with enthusiasm as the mediator, there is an indirect effect for enthusiasm of 0.26 (p<.001, 44% of total effect) in the Quality Rating analysis, although not in the Counterarguments analysis. Finally, the mediation test for anxiety shows no indirect effect. (Results for enthusiasm and anxiety are in Appendix A.) In sum, relative anger (against uncongenial arguments) and enthusiasm (for congenial ones) motivated people to evaluate congenial arguments more favorably than uncongenial ones. This effect did not emerge for anxiety. In addition, anger, but not anxiety or enthusiasm, motivated participants to counterargue uncongenial information. Together, these results support *Hypothesis 2* (mediating effect of anger) and *Hypotheses 3* (lesser role for enthusiasm) and *4* (no role for anxiety).

[Table 2 here]

Plots of the anger mediation test sensitivity parameter ρ are in Appendix A. Both plots indicate that, for the mediation effect to be zero, there would need to be an omitted variable—beyond the additional emotion measures and the set of standard controls—correlated with both the mediator (anger) and the dependent variables at approximately 0.4. In short, this is a relatively robust effect.

In sum, Study 1 supports our hypotheses, revealing politically biased assimilation of issue arguments motivated by anger (and to a lesser extent enthusiasm). This said, the study has certain limitations. First, MTurk is a convenience sample with characteristics that do not match the broader U.S. population. For our purposes, the most worrisome sample attribute is the relatively few participants on the conservative end of the political spectrum. Second, looking to the research design,

while counterarguing opposing arguments appears to be the most common way in which political bias manifests, people *also* tend to reveal bias by reinforcing their preferred issue stance with additional, supportive considerations (Munro, Ditto, et al., 2002; Taber and Lodge, 2006). Importantly, such bolstering may stem more from enthusiasm than anger, given that enthusiasm has a track record of making well-established attitudes more salient and reinforcing habitual perspectives and behaviors (e.g., Groenendyk, 2016). Thus, without gauging participants' supporting considerations, we may bias our study against finding a role for enthusiasm.

Study 2

Sample & Study Design

We conducted Study 2 in June 2016 via Qualtrics Panels (N=641). Qualtrics employed quota sampling to obtain a sample that is roughly nationally representative with respect to age, gender, and region. To ensure representation of the full spectrum of political opinion, we requested equal numbers of Republicans, Democrats, and Independents. All participants were at least 18 years of age and resided in the U.S. at the time of the study. The median level of education was some college. The median participant was 48 years old, and 83% self-identified as white.

Study 2 was similar to Study 1 in its flow of study sections and the assignment and randomized order of issue arguments. However, we implemented two main design changes to improve upon Study 1. First, participants were given the opportunity to report supporting thoughts. (Note that the order in which the counterargument and supporting thoughts questions were presented was randomized.) Second, we simplified and shortened the issue arguments to reduce study length and

ensure all participants read the stimuli. This also had the advantage of allowing us to make the "liberal" and "conservative" side of each issue more parallel in terms of content.[16]

Variables

We have three dependent variables in Study 2: (1) quality rating; (2) number supporting thoughts; and (3) number counterarguments. As in Study 1, we create "difference measures." See again Table 1. Emotion measures and independent measures are also identical to Study 1. We again pool results across all three issue groups[17] and include a variable controlling for issue assignment.

Results

We begin with the equations that establish a motivated reasoning effect (Equations 2 in Appendix B, Table A5). The "total effects" of prior attitudes on the dependent variables are smaller than in the previous study, but still large in size and statistically significant: $b_{attitude}$=0.75 (Quality) and $b_{attitude}$=0.65 (Counterarguments), both p<.001. New to this study was the measurement of supporting arguments, and participants' issue attitudes indeed were associated with a greater number of

---

[16] Again, with respect to quality ratings, the opposing arguments in each pair were statistically equivalent. Also note that, as in Study 1, we employed multiple choice manipulation checks following each issue argument. Participants were excluded if they missed both manipulation checks.

[17] Again, key mediation results for each issue group separately are available in Appendix B.

bolstering arguments for one's preferred perspective relative to the opposition ($b_{attitude}$=0.21, p<.001).[18] These findings support *Hypothesis 1*.

The relevant path coefficients from Equations 1 and 3 are in Figure 2, below. Holding a relatively conservative position on the relevant issue "predicted" greater anger ($b_{attitude}$=0.77) and anxiety ($b_{attitude}$=0.48) in response to the liberal argument and greater enthusiasm ($b_{attitude}$=0.44) in response to the conservative argument (all p<.001). Controlling for pre-test attitude, greater anger in response to the liberal argument was associated with all three dependent variables (Quality Rating: b_{anger}=0.42, p<.001; Supporting Arguments: b_{anger}=0.21, p<.001; Counterarguments: b_{anger}=0.26, p<.01).

[Figure 2 here]

Coefficients on enthusiasm were not statistically significant across the three DVs. Finally, relatively greater anxiety in response to the liberal argument was reliably associated with fewer arguments bolstering the conservative argument, although the relationship is small ($b_{anxiety}$=-0.08, p<.001). The other two anxiety coefficients were not significant. Again, controlling for emotion, pre-test attitudes remained associated with the dependent variables to a degree ($b_{attitude}$=0.34; $b_{attitude}$=0.11; $b_{attitude}$=0.47; all p<.001).

We again conducted formal mediation tests. See Table 3. The indirect effect of anger is approximately 0.3 (p<.001, 49% of the total effect) when Quality Rating is the DV, 0.16 (p<.001,

---

[18] As in Study 1, the size of the coefficients on the prior attitude measures noticeably shrink in size when measured emotion is added to the models (Equation 3 in Table A5), suggesting mediation. Differences between the coefficients (without and then with emotion included) are all at least p<.05.

58% of the total effect) when Supporting Arguments is the DV, and 0.2 ($p<.001$, 30% of the total effect) when Counterarguments is the DV. Similar to Study 1, although much smaller in size, is an indirect effect for enthusiasm of 0.04 ($p<.001$, 11% of the total effect) in the Quality Rating analysis, but not the other analyses. Also similar to Study 1, no indirect effect of anxiety reaches statistical significance. In sum, *Hypotheses 2*, *3*, and *4* are again supported.

[Table 3 here]

We again plot the sensitivity parameter ρ, focusing on the indirect effect of anger. See Appendix B. The indirect effect of anger in the Quality Rating analysis is quite robust—an omitted variable correlated with anger and the DV at about .5 is needed to reduce the effect to zero. The smaller effects in the other two analyses are admittedly somewhat less robust, with the mediation effect reaching zero with a ρ of approximately 0.2.

Discussion & Conclusion

It is well-established that individuals are frequently motivated to reason and process information in a way that allows them to defend their prior beliefs and attitudes, rather than reach an accurate conclusion (e.g., Kahan, 2011; Kunda, 1990; Leeper and Slothuus, 2014; Lodge and Taber, 2013; Redlawsk, 2002). The evidence we have presented supports our expectation that anger plays a unique role in mediating the relationship between a person's issue attitudes and his or her (a) bias toward evaluating ideologically congruent arguments more favourably than incongruent ones; (b) tendency to counterargue ideologically incongruent arguments (more than congruent ones); and (c) tendency to bolster congruent arguments with additional arguments and evidence (relative to incongruent ones). Across all models, relative anger felt in response to arguments that contradicted one's point of

view mediated approximately one-third to more than one-half of the total effect of issue attitude position on the dependent variables. In two of the five models (Quality Rating in Studies 1 and 2), enthusiasm felt for arguments in favor of one's point of view played a smaller mediating role. In both studies, relative anxiety felt in response to opposition arguments did not appear to increase or decrease bias.

The studies are not without limitations. The most important limitation is the fact that the emotions aroused during the course of the online studies are not exogenous. With this in mind, it is possible that they are epiphenomenal—an additional dependent variable that (while perhaps interesting in its own right) is merely correlated with bias (i.e., evaluations, counterarguments, and bolstering that are in line with one's priors). We think this is unlikely given the theoretical and empirical consistency of our results; however, we acknowledge this as an alternate interpretation. As suggested by Bullock, Green, and Ha (2010) and others, we encourage other researchers to test our interpretation by conducting related biased assimilation studies in which anger, anxiety, and enthusiasm are exogenously primed. Note that this alternate study design is complementary, not superior. Our approach is valuable precisely because we have measured naturally occurring emotion. While priming anger in an experimental framework would allow us to make a stronger causal claim, such a study would be considerably lower in external validity, raising the concern that we are inducing an emotional reaction that does not occur "in the wild."

We also want to highlight the fact that measuring emotional reactions to conservative and liberal arguments means those measures will be correlated to some extent with participants' issue positions (as any emotional reaction will be relatively more positive toward congenial arguments and negative toward uncongenial ones). This is an unavoidable feature of measuring naturally occurring emotion;

however, given this and our interest in anger's unique role, it is critical that we included measures of additional emotions in our models, particularly negative ones. Without such controls, our results would be vulnerable to the counterargument that we are simply observing the biasing effects of the positive/negative valence of strong attitudes. Given that we include measures of anger as well as anxiety and enthusiasm—and given that these other emotions exhibit quite different effects—we feel confident in our conclusions regarding anger's role in bias.[19]

Finally, it is important to note that, while the mediation effects for anger were large by social scientific standards, participants' biased reactions to the political arguments were not exclusively driven by anger (alone, or in combination with enthusiasm). As is the case in most mediation studies, the observed mediation was partial. With this in mind, one or more psychological processes may work in tandem with anger to produce bias. As we briefly discussed earlier, preconscious affect—in the form of hot cognition and affective contagion—brings to working memory a set of biased

---

[19] An alternate measurement strategy would be to measure participants' moods or emotional predilections prior to the stimulus and assess whether such anger moderates (increases) the influence of issue attitudes on the dependent variables. We do not have such measures available; however, at the suggestion of a reviewer, we attempted such a moderation analysis by averaging participants' emotional responses to both stimuli (i.e., average anger, anxiety, and enthusiasm separately) and then inserting three interaction terms—taking the form *average emotion* x *prior attitude*—into each model. Across Study 1 and 2, the coefficients on these interaction terms were not statistically significant, although the coefficients on *anger* x *prior attitude* were consistently positive. This suggests that, as we have argued, anger toward a specific issue argument fuels motivated reasoning more so than a general orientation toward anger or angry mood.

considerations. Given this, information that contradicts a strongly held view may seem less credible because it doesn't reflect the biased set of considerations a person has in mind. Similarly, a person with many one-sided considerations in mind will have counterarguments at the ready to challenge an opposition view. In short, there is reason for biased assimilation even if the conscious process of evaluating and counterarguing information is itself emotion-free. The emotion-driven framework we have described builds on this. The valence of the political attitude and associated considerations increases the likelihood of anger in response to challenging information, which then increases the likelihood of bias. Biased considerations in and of themselves are also important to anger-fueled motivated reasoning in that they provide ammunition to those highly motivated to counterargue and bolster in defense of their priors.

To conclude, our research suggests that angry reactions to opposition viewpoints play a key role in the biased evaluation of political arguments. This is quite problematic for public opinion. Anger effectively closes citizens' minds to new information that might lead them to reconsider their views in ways that ultimately better serve their values and interests. Those seeking to decrease motivated reasoning might consider implementing reforms that target angry reactions to political information. This may be easier said than done, of course; however, one simple reform is to encourage communicators to avoid framing political information as part of a well-defined political battle between opposing sides, as is so common today (for related research, see Bolsen, Druckman, and Cook, 2014; Franklin Fowler and Gollust, 2015). Such politicization not only likely raises ideologues' defenses but also is often inaccurate, given that policy debates are nuanced and supporters and opponents tend to be less ideologically doctrinaire than depicted in news stories.

We do not mean to argue that anger in politics is all bad. As a universal emotion, anger is in many cases adaptive, helping people overcome recurring challenges. In the political realm, justifiable anger can help mobilize people to defend their interests and values. However, we would argue that anger plays less of a positive role in political reasoning and deliberation, hampering people's ability to absorb new information and understand one another.

References

Albertson, Bethany, and Shana Gadarian. 2015. *Anxious Politics: Democratic Citizenship in a Threatening World*. New York: Cambridge University Press.

Aschwanden, Christie. 2016. There's Probably Nothing That Will Change Clinton Or Trump Supporters' Minds. *FiveThirtyEight*, July 20.

Baron, Reuben M., and David A. Kenny 1986. The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology 51*(6): 1173-1182.

Berinsky, Adam J., Gregory A. Huber, and Gabriel S. Lenz. 2012. Evaluating Online Labor Markets for Experimental Research: Amazon.com's Mechanical Turk. *Political Analysis 20*: 351-368.

Bolsen, Toby, James N. Druckman, and Fay Lomax Cook. 2014. The Influence of Partisan Motivated Reasoning on Public Opinion. *Political Behavior 36*: 235-262.

Brader, Ted. 2006. *Campaigning for Hearts and Minds: How Emotional Appeals in Political Ads Work*. Chicago: University of Chicago Press.

Brader, Ted, and George E. Marcus. 2013. Emotion and Political Psychology. In *The Oxford Handbook of Political Psychology*, *Second Edition*, Leonie Huddy, David O. Sears, and Jack S. Levy (eds). New York: Oxford University Press (pp. 165-204).

Bullock, John G., Donald P. Green, and Shang E. Ha. 2010. Yes, But What's the Mechanism? (Don't Expect an Easy Answer). *Journal of Personality and Social Psychology 98*(4): 550-558.

Cassino, Dan, and Milton Lodge. 2007. The Primacy of Affect in Political Evaluations. In *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, Russell Neuman, George E. Marcus, Ann N. Crigler, and Michael MacKuen (eds). Chicago, IL: Chicago University Press (pp. 101-123).

Erisen, Cengiz, Milton Lodge, and Charles S. Taber. 2014. Affective Contagion in Effortful Political Thinking. *Political Psychology 35*(2): 187-206.

Erisen, Cengiz, David Redlawsk, and Elif Erisen. Forthcoming. Complex Thinking as a Result of Incongruent Information Exposure. *American Politics Research*.

Franklin Fowler, Erika, and Sarah E. Gollust. 2015. The Content and Effect of Politicized Health Controversies. *The Annals of the American Academy of Political and Social Science 658*(March): 155-171.

Gray, Jeffrey A. 1994. Three Fundamental Emotion Systems. In *The Nature of Emotion: Fundamental Questions*, Paul Ekman and Richard J. Davidson (eds). New York: Oxford University Press (pp. 243-247).

Groenendyk, Eric. 2016. The Anxious and Ambivalent Partisan: The Effect of Incidental Anxiety on Partisan Motivated Recall and Ambivalence. *Public Opinion Quarterly 80*(2): 460-479.

Gutmann, Amy, and Dennis Thompson. 2004. *Why Deliberative Democracy?* Princeton, NJ: Princeton University Press.

Hart, P. Sol, and Erik C. Nisbet. 2011. Boomerang Effects in Science Communication: How Motivated Reasoning and Identity Cues Amplify Opinion Polarization About Climate Mitigation Policies. *Communication Research 39*: 701-723.

Imai, Kosuke, Luke Keele, and Dustin Tingley. 2010. A General Approach to Causal Mediation Analysis. *Psychological Methods 15*: 309-334.

Imai, Kosuke, Luke Keele, Dustin Tingley, and Teppei Yamamoto. 2011. Unpacking the Black Box of Causality: Learning about Causal Mechanisms from Experimental and Observational Studies. *American Political Science Review 105*: 765-789.

Huddy, Leonie, Stanley Feldman, and Erin Cassese. 2007. On the Distinct Political Effects of Anxiety and Anger. In *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, Russell Neuman, George E. Marcus, Ann N. Crigler, and Michael MacKuen (eds). Chicago, IL: Chicago University Press (pp. 202-230).

Kahan, Dan M. 2011. Foreword: Neutral Principles, Motivated Cognition, and Some Problems for Constitutional Law. *Harvard Law Review 125*(1): 1-77.

Kahan, Dan M. 2013. Ideology, Motivated Reasoning, and Cognitive Reflection. *Judgment and Decision Making 8*(4): 407-424.

Kim, Sung-youn, Charles S. Taber, and Milton Lodge. 2010. A Computational Model of the Citizen as Motivated Reasoner: Modeling the Dynamics of the 2000 Presidential Election. *Political Behavior 32*: 1-28.

Kraft, Patrick W., Milton Lodge, and Charles S. Taber. 2015. Why People 'Don't Trust the Evidence': Motivated Reasoning and Scientific Beliefs. *The Annals of the American Academy of Political and Social Science 658*(March): 121-133.

Kunda, Ziva. 1990. The Case for Motivated Reasoning. *Psychological Bulletin 108*(3): 480-498.

Ladd, Jonathan McDonald, and Gabriel S. Lenz. 2011. Does Anxiety Improve Voters' Decision Making? *Political Psychology 32*(2): 347-361. In *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, Russell Neuman, George E. Marcus, Ann N. Crigler, and Michael MacKuen (eds). Chicago, IL: Chicago University Press (pp. 152-179).

Lazarus, Richard S. 1991. *Emotion & Adaptation*. New York: Oxford University Press.

Leeper, Thomas J., and Rune Slothuus. 2014. Political Parties, Motivated Reasoning, and Public Opinion Formation. *Advances in Political Psychology 35*(Suppl. 1): 129-156.

Lodge, Milton, Marco R. Steenbergen, and Shawn Brau. 1995. The Responsive Voter: Campaign Information and the Dynamics of Candidate Evaluation. *The American Political Science Review 89*(2): 309-326.

Lodge, Milton, and Charles S. Taber. 2005. The Automaticity of Affect for Political Leaders, Groups, and Issues: An Experimental Test of the Hot Cognition Hypothesis. *Political Psychology 26*(3): 455-482.

Lodge, Milton, and Charles S. Taber. 2013. *The Rationalizing Voter*. New York: Cambridge University Press.

Lord, Charles G., Lee Ross, and Mark R. Lepper. 1979. Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence. *Journal of Personality and Social Psychology 37*(11): 2098-2109.

MacKinnon, David P., Ghulam Warsi, and James H. Dwyer. 1995. A Simulation Study of Mediated Effect Measures. *Multivariate Behavioral Research 30*: 41-62.

MacKuen, Michael, Jennifer Wolak, Luke Keele, and George E. Marcus. 2010. Civic Engagements: Resolute Partisanship or Reflective Deliberation. *American Journal of Political Science 54*: 440-458.

Marcus, George E., W. Russell Neuman, and Michael MacKuen. 2000. *Affective Intelligence and Political Judgment*. Chicago: University of Chicago Press.

Marcus, George E., W. Russell Neuman, and Michael B. MacKuen. 2015. Measuring Emotional Response: Comparing Alternate Approaches to Measurement. *Political Science Research and Methods*. *FirstView* Article.

Mullen, Elizabeth, and Linda J. Skitka. 2006. Exploring the Psychological Underpinnings of the Moral Mandate Effect: Motivated Reasoning, Group Differentiation, or Anger? *Journal of Personality and Social Psychology 90*(4): 629-643.

Munro, Geoffrey D., Peter H. Ditto, Lisa K. Lockhart, Angela Fagerlin, Mitchell Gready, and Elizabeth Peterson. 2002. Biased Assimilation of Sociopolitical Arguments: Evaluating the 1996 U.S. Presidential Debate. *Basic and Applied Social Psychology 24*(1): 15-26.

Nyhan, Brendan, and Jason Reifler. 2010. When Corrections Fail: The Persistence of Political Misperceptions. *Political Behavior 32*(2): 303-330.

Petersen, Michael Bang, Martin Skov, Søren Serritzlew, and Thomas Ramsøy. 2013. Motivated Reasoning and Political Parties: Evidence for Increased Processing in the Face of Party Cues. *Political Behavior 35*: 831-854.

Redlawsk, David P. 2002. Hot Cognition or Cool Consideration? Testing the Effects of Motivated Reasoning on Political Decision Making. *The Journal of Politics 64*(4): 1021-1044.

Redlawsk, David P., Andrew J.W. Civettini, and Karen M. Emmerson. 2010. The Affective Tipping Point: Do Motivated Reasoners Ever 'Get It'? *Political Psychology 31*(4): 563-593.

Redlawsk, David P., Andrew J.W. Civettini, and Richard R. Lau. 2007. Affective Intelligence and Voting: Information Processing and Learning in a Campaign. In *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, Russell Neuman, George E. Marcus, Ann N. Crigler, and Michael MacKuen (eds). Chicago, IL: Chicago University Press (pp. 152-179).

Russell, James A. 2003. Core Affect and the Psychological Construction of Emotion. *Psychological Review 110*(1): 145-172.

Smith, Craig A., and Phoebe C. Ellsworth. 1985. Patterns of Cognitive Appraisal in Emotion. *Journal of Personality and Social Psychology 48*(4): 813-838.

Taber, Charles S., Damon Cann, and Simona Kucsova. 2009. The Motivated Processing of Political Arguments. *Political Behavior 31*: 137-155.

Taber, Charles S., and Milton Lodge. 2006. Motivated Skepticism in the Evaluation of Political Beliefs. *American Journal of Political Science 50*(3): 755-769.

Tversky, Amos, and Daniel Kahneman. 1992. Advances in Prospect Theory: Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty 5*(4): 297-323.

Valentino, Nicholas A., Antoine Banks, Vincent L. Hutchings, and Anne K. Davis. 2009. Selective Exposure in the Internet Age: The Interaction between Anxiety and Information Utility. *Political Psychology 30*(4): 591-613.

Valentino, Nicholas A., Ted Brader, Eric W. Groenendyk, Krysha Gregorowicz, and Vincent L. Hutchings. 2011. Election Night's Alright for Fighting: The Role of Emotions in Political Participation. *The Journal of Politics 73*(1): 156-170.

Weeks, Brian E. 2015. Emotions, Partisanship, and Misperceptions: How Anger and Anxiety Moderate the Effect of Partisan Bias on Susceptibility to Political Misinformation. *Journal of Communication 65*(4): 699-719.

Young, Maia J., Larissa Z. Tiedens, Heajung Jung, and Ming-Hong Tsai. 2011. Mad Enough to See the Other Side: Anger and the Search for Disconfirming Information. *Cognition & Emotion 25*(1): 10-21.

Figures
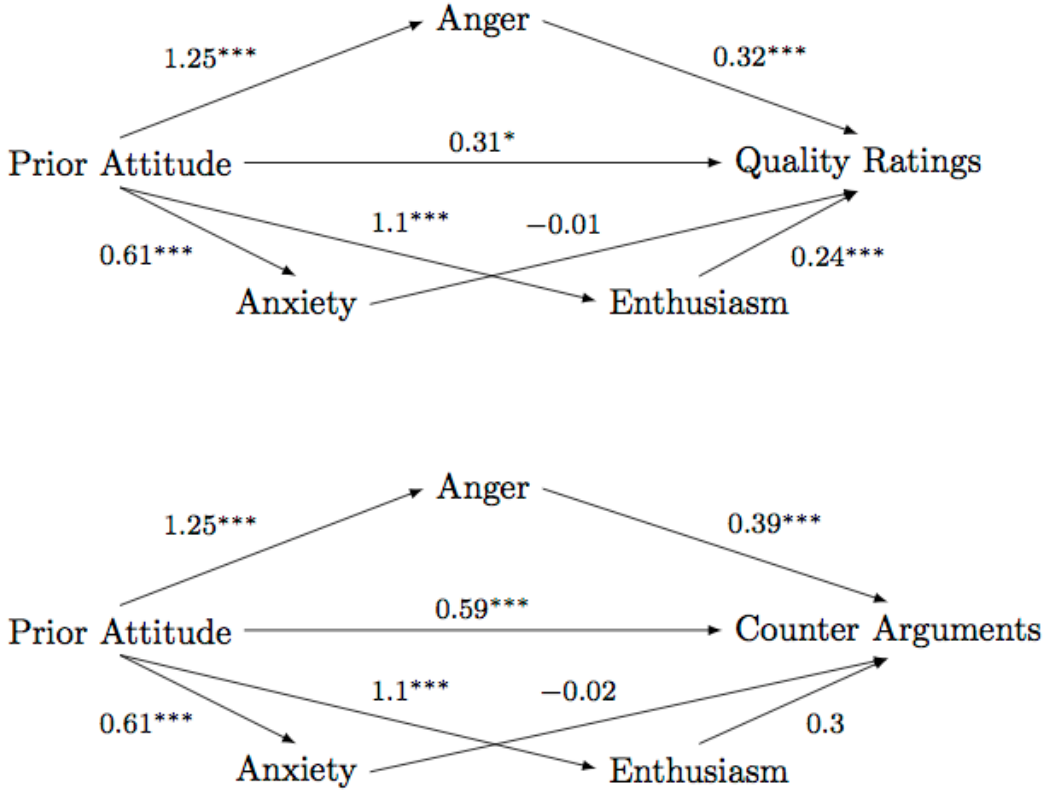
Figure 1: Path coefficients from Study 1. Anger, anxiety, enthusiasm examined as simultaneous mediators.

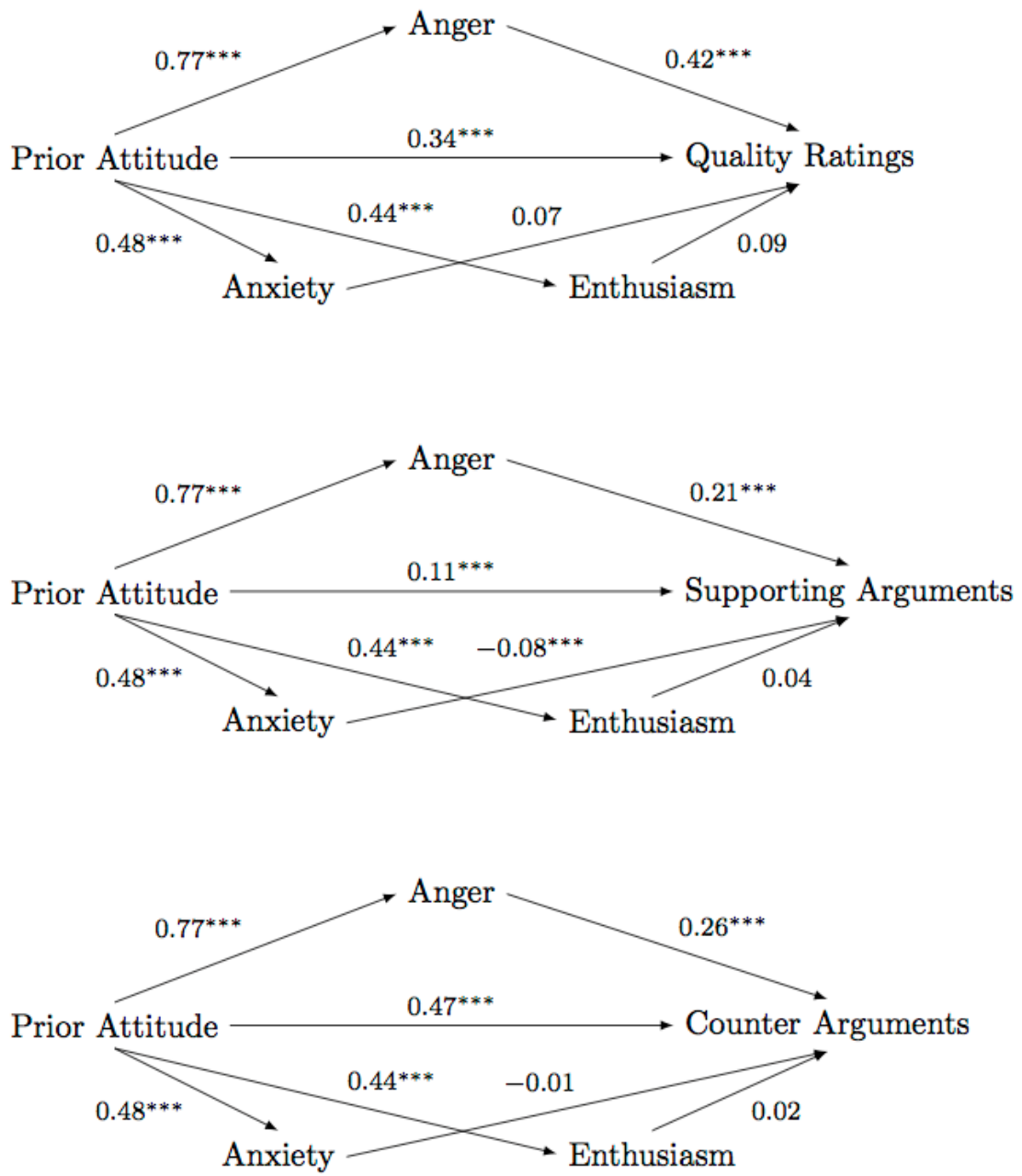Additional controls included in models. Full results in Appendix A.

Figure 2: Path coefficients from Study 2. Anger, anxiety, enthusiasm examined as simultaneous mediators. Additional controls included in models. Full results in Appendix B.

Tables

Table 1: Construction of Dependent Variables

Variable name	Original measure (recoded 0 to 1)	Transformations	Difference measures
Quality Rating	*RightGrade, LeftGrade* 6-point scale: F to A+ *RightStrength, LeftStrength* 7-point scale: Weak to Strong	*RightQuality =* (RightGrade+RightStrength)/2 *LeftQuality =* (LeftGrade+LeftStrength)/2	*Quality*=RightQuality−LeftQuality (Range: -1 to 1)
Counterarguments	*AntiRightCounter* *AntiLeftCounter* Up to 5 (Study 1) or 4 (Study 2)	N/A	*Counter*=AntiLeftCounter−AntiRightCounter (Range: -1 to 1)
Supporting Arguments (Study 2 only)	*RightSupport* *LeftSupport* Up to 4	N/A	*Support*=RightSupport−LeftSupport (Range: -1 to 1)

Table 2. Direct Effects of Issue Preference & Indirect Effects of Anger – Study 1

	DV = Quality Rating		DV = Counterarguments	
	Parameter estimate	*p*-value	Parameter estimate	*p*-value
Direct Effect of Prior Attitude (ADE)	0.332	< .001	0.543	< .001
Indirect Effect of Anger (ACME)	0.389	< .001	0.503	< .001
Total Effect	0.721	< .001	1.046	< .001
Percent via Mediation	53.6%	< .001	49.3%	< .001
Sample Size	296		296	
Simulations	100		100	

Note: Controls include anxiety, enthusiasm, issue, party ID, age, race, sex, education, and religiosity.

Table 3. Direct Effects of Issue Preference & Indirect Effects of Anger – Study 2

	DV = Quality Rating		DV = Supporting Arguments		DV = Counterarguments	
	Parameter estimate	p-value	Parameter estimate	p-value	Parameter estimate	p-value
Direct Effect of Prior Attitude (ADE)	0.345	< .001	0.116	= .14	0.464	< .001
Indirect Effect of Anger (ACME)	0.328	< .001	0.162	< .001	0.204	< .001
Total Effect	0.674	< .001	0.278	< .001	0.668	< .001
Percent via Mediation	48.8%	< .001	58.1%	< .001	29.7%	< .001
Sample Size	548		548		548	
Simulations	100		100		100	

Note: Controls include anxiety, enthusiasm, issue, party ID, age, race, sex, education, and religiosity.