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Is a Worried Citizen a Good Citizen? Emotions, Political Information Seeking, and Learning via the Internet

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In this study we explore the mediating role of emotions in the process of becoming a politically informed citizen. Contrary to previous studies, we expect that anger and anxiety will have much different effects on this process. We suspect the role of anxiety is somewhat unique even among negative emotions as mediator of the causal effect of political threats on information seeking and learning. In addition, we speculate that anxiety should improve the quality *of information seeking, not just its quantity. In one experiment, we induce emotions directly and find that while anger, enthusiasm, and anxiety can lead people to claim they will pay attention to the campaign, anger actually depresses total information seeking. In a second experiment, we examine the impact of realistic political threats and find that exposure triggers several emotions but that only anxiety boosts information seeking and learning.*

KEY WORDS: Information seeking, Engagement, Internet, Emotions, Learning

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Many theories of governance argue that an informed and engaged citizenry, able to deliberate about important issues of the day in open and free discussions, is ideal and perhaps necessary for a fully functioning democracy (Dahl, 1998; Fishkin, 1991; Habermas, 1989). To be sure, there exists an important debate about exactly what *kind* of knowledge, and how much of it, is enough to produce reasonable democratic outcomes (Lupia, 1994, 2004). Furthermore, there is some evidence that face-to-face deliberation and disagreement may actually *discourage* participation in politics (Mutz, 2006). Still, few would disagree that more relevant political knowledge is generally better than less, especially if we demand democratically elected officials to be responsive to majority opinion. In other words "voting correctly" requires citizens validly to connect their preferences to the policy programs, ideologies, and character traits of candidates running for office (Lau & Redlawsk, 1997).

Reaching Dahl's (1998) ideal of "enlightened understanding," however, seems quite unrealistic given the past 50 years of empirical evidence. First, Americans know less political information than one would suspect is necessary in order to make sophisticated evaluations of policy alternatives or candidates in anything but the highest profile legislative debates and electoral campaigns (Bennet, 1988; Delli Carpini & Keeter, 1996). Second, plentiful circumstantial evidence suggests that deficits in basic political information are consequential for democratic representation (Althaus, 1998; Bartels, 1996; Gilens, 2001).

Emotions in the Political Realm

The American public's dearth of political knowledge contributes to conventional wisdom about the role of emotion in politics: that negative emotions, particularly fear, degrade the quality and quantity of public information seeking, deliberation, and political knowledge.[1] It has always been fashionable for American politicians to accuse their opponents of fear mongering. Campaign speeches, State of the Union addresses, political advertisements, and newspaper editorials are riddled with accusations from both sides of the aisle that the other guy is trying to play on the public's fears (Brader, 2006; Marcus, 2002). Attack-oriented campaign rhetoric prompts concern that the resulting fear or anxiety might suppress public skepticism and critical thinking.

Recently, Democrats have accused the Bush administration of using fear mongering to nurture the fictitious linkage between Saddam Hussein and al-Qaeda, the group responsible for the September 11, 2001, terrorist attacks. When Speaker Dennis Hastert claimed immediately prior to the 2004 Presidential Election that a Kerry victory would foster a more effective al-Qaeda, Edwards fired

[1] In this paper, as in other work in this area (Brader 2006; Marcus, Neuman, & MacKuen, 2000), we will use the terms "fear" and "anxiety" interchangeably.

back that Hastert was conforming to a general strategy of fear mongering by the Republican Party (Archibold, 2004). Republicans use the same strategy, accusing Democrats of using scare tactics to stifle debate about welfare and Medicare reform (Hernandez, 2003). The supposed detrimental impact of political fear rhetoric forms the centerpiece of Al Gore's new book entitled *The Assault on Reason* (2007). The first sentence of Chapter 1 reads: "Fear is the most powerful enemy of reason" (p. 23).

Concern about fear mongering in politics has deep philosophical roots (see Marcus, 2002, for discussion). Plato's conception of human nature was hierarchically arranged into reason, emotion, and basic bodily needs and appetites, with clear normative preference given to the first over the latter two. Aristotle was deeply concerned with manipulative power of a trained orator armed with the ability to elicit powerful emotions in his audience. The founders of the American republic also warned about the dangers of emotion in politics, on the assumption that they interfere with rational judgment. Governmental institutions, they thought, must be designed to mute the negative effects of the "passions" that Hamilton and Madison discussed in the Federalist Papers (Hamilton, Madison, & Jay, 1788). In fact, much modern political philosophy continues to denigrate the role of emotion in democratic systems (see Corcoran, 2004, for a review).

This paper critically examines these claims in order to contribute to the growing debate about the role of emotions in politics. Building on recent work in cognitive neuroscience, social psychology, and political science, we argue that the story about emotions in the political arena is a bit more complicated than conventional wisdom or current theory states. In particular, we focus on the distinct impact of negative emotions—fear versus anger—on interest, information seeking, and learning about politics. We suspect fear can in fact stimulate political interest, enhance the quality of information seeking in the political arena, and boost learning while other negative emotions such as anger, and even positive ones like enthusiasm, tend not to.

So what do we know about the impact of emotions on outcomes democratic theorists might care about, such as attention, information seeking, and learning? Where there once existed a clear normative preference for "thinking" over "feeling" in public life, evidence from social psychology and neuroscience suggests that such distinctions are invalid. Recent empirical evidence demonstrates conclusively that "reason" and "emotion" are tightly intertwined and mutually dependent processes (Damasio, 1994; Lazarus, 1991). This revolution in the study of emotion has led to a number of insights about the causes of political interest, attention, learning, and behavior. In particular, we begin with the finding that negative emotions, and especially anxiety, can increase attention to threats in the environment, focus on new information, and even boost the motivation to act (Damasio, 1994; Eysenck, 1992; Gray, 1987; Lazarus & Lazarus, 1994; LeDoux, 1996). In other words, experiencing strong emotions is not necessarily at odds with achieving the normative ideals of democratic citizenship.

Marcus and MacKuen (1993) provide some evidence to support this new line of thinking about the potentially positive consequences of negative emotions in politics. They suggest that *anxiety* (a concept they measure with survey items tapping both anger and fear) might boost political information seeking and learning. They base this expectation on a dual channel model in which particular emotional states trigger distinct cognitive strategies for dealing with the environment (Damasio, 2000). Enthusiasm, they argue, results from stimuli suggesting positive goals are being met, and thus reinforces habitual behaviors and attitudes (activating the *dispositional* system). Anxiety implies danger or negative outcomes, which subsequently triggers a distinct cognitive system (labeled the *surveillance* system) in which the individual pays extra attention to his environment, is more attentive to new information, and is more likely to break out of habitual patterns of behavior. Marcus, Neuman, and MacKuen (2000) also demonstrate a correlation between self-reported anxiety about candidates and interest in politics, intention to seek out new information, and knowledge about where the candidates stand on a wide variety of issues. Hutchings, Valentino, Philpot, and White (2006) also find that anxiety boosts learning about politics. Brader (2005) finds political advertising has a similar effect: ads likely to trigger anxiety led citizens to rely less on predispositions and more on new information.

The Impact of Specific Emotions

Marcus and his colleagues have long grouped survey measures of fear and anger together in their models of campaign attention, information seeking, and learning. They base this practice on the insights of circumplex models of emotional response (Plutchik, 1980; Russell, 1980; Zevon & Tellegen, 1982). These models suggest that all emotional responses vary on two dimensions, positive and negative. Each independent dimension varies from low to high arousal. Low-arousal positive emotions are sadness and depression, while high-arousal positive emotions include hope, pride, elation, etc. Low-arousal negative emotions include calm and boredom while high-arousal negative emotions include anger, fear, and disgust. This two-dimensional structure seems to fit the National Election Study measures of emotional reactions to candidates and parties quite well (Marcus, 1988). Moreover, these survey measures of anger and fear have similar effects on attention to politics and learning (Marcus & MacKuen, 1993; Marcus et al., 2000). In fact, current standard practice in the literature on emotions in political science dictates combining measures of anger and fear (see for example Rudolph, Gangl, & Stevens, 2000).

Despite this early consensus, there is growing evidence that discrete emotions, especially negative ones like fear and anger, may have distinct effects on information processing (see Huddy, Feldman, & Cassese, 2007; Isbell, Ottati, & Burns, 2006). Cognitive appraisal theories of emotion (Frijda, 1988; Lazarus, 1991;

Smith & Ellsworth, 1985) suggest that anger and anxiety derive from different relationships between the individual and her environment, differences that can trigger distinct motivations and behaviors. Anger rises with certainty about the cause of the threat, while fear is more often triggered when an individual is less certain (Lerner and Keltner, 2001; Tiedens & Linton, 2001). Furthermore, Lerner and Keltner (2001) find that anger seems to trigger risk-accepting behaviors, while anxiety leads to risk aversion. Other evidence suggests that anger triggers the use of cognitive heuristics, while fear will lead to more systematic information processing (Bohner & Weinerth, 2001; Tiedens & Linton, 2001).

So while negative emotions such as anxiety and anger may both boost attention to politics, they may not uniformly focus information seeking, especially of the type necessary to promote learning. While anxiety is associated with attention to current circumstances and concentration on threatening stimuli, anger occurs when an individual has determined the cause of the threat and decided he has the ability to do something about it (Lazarus & Lazarus, 1994). The commitment to act when angry might then cut off further attempts to gather and integrate new information.

There is evidence that negative emotions like fear can have deleterious effects on concentration, learning, and problem solving. Test anxiety, for example, can interfere with performance of recall tasks (Ashcraft & Kirk, 2001). This may occur because anxiety can be highly distracting, undermining concentration and learning (Calvo & Carreiras, 1992; Tohill & Holyoak, 2000). At high levels, anxiety might undermine an individual's ability to filter out irrelevant information, leading to less efficient encoding of new material in memory (Eysenck, 1992; Wood, Mathews, & Dalgleish, 2001). Individuals may be just as likely (or more likely) to flee or withdraw in reaction to extreme anxiety as they are to inquisitively approach, depending on the circumstances (LeDoux, 1996; Panskepp, 1998). Work on fear campaigns in the health arena suggest that as the anxiety message intensifies, the desire to "avoid" the situation (by removing from further consideration an uncontrollable threat) will at some point overwhelm the drive to seek out new information (Witte, 1998; Witte & Allen, 2000).

Some evidence does, in fact, point toward a negative relationship between fear and information seeking and/or learning in politics. For example, exposure to popular "hardball" political debating significantly boosted physiological measures of arousal (and interest) while simultaneously depressing learning (Mutz and Reeves, 2005). This is consistent with Huddy and Feldman (n.d.) and Huddy, Feldman, Tabler, and Lhav (2005), who find that while those most anxious after 9/11 and the beginning of the war in Iraq were more attentive to politics, they were also less accurate in their recall about these events. This effect had powerful consequences: People who knew fewer facts about the war were more likely to support it.

Huddy et al. (2007) pursue the possibility that anger and fear have distinct impacts on risk acceptance, political motivation, and information processing. In a

survey they find that anger boosts support for the Iraq war by causing citizens to underestimate the risks associated with that military intervention. Anxiety, on the other hand, leads to an overestimation of risk, and therefore a decline in support for war in Iraq. Finally, they find that both anxiety and anger boosted attention to the war in the media and in interpersonal conversations. However, anger seems to undermine the use of factual information and support, while anxiety boosts the impact of factual information modestly. We will bring experimental tests to bear in order to provide additional strength to the causal inferences Huddy et al. (2007) make about the distinct impact of anger and fear on attention, political information seeking, and learning.

The impact of positive emotions such as happiness, hope, and enthusiasm on information processing also has received attention. Lerner and Keltner (2001) find that enthusiasm operates more like anger than fear, presumably enhancing risk taking and the willingness to expend scarce resources. Recent work by Isbell and colleagues suggest happy moods might trigger less systematic information processing and may lead respondents to rely more heavily on stereotypes to guide their attention to new information (see Isbell et al., 2006, for a review). In the political realm, Marcus et al. (2000) and Brader (2006) find enthusiasm boosts attention and information seeking. Finally, Marcus (2002) argues that another negative emotion, disgust, should also trigger the disposition system, leading people to use the same habits of mind that positive emotions such as enthusiasm do. Though not as central to our current study, we are able to examine this emotion in a limited way.

Goals

Our study has three primary goals. First, we revisit the basic question about the impact of specific negative emotions on interest and political learning. The contradictory evidence about the impact of emotions, especially negative ones, on information seeking and learning reviewed above makes additional exploration necessary. Furthermore, current work on the political impact of emotion employs cross-sectional survey data. This prompts concerns about endogeneity: Do emotions produce information seeking or do those who seek information experience strong emotions as a result?[2] Huddy and Feldman (n.d.) take this concern seriously, using two-stage least squares in an attempt to purge these reciprocal influences from estimates of the impact of anxiety on learning. Still, experiments are

[2] We are also concerned that the NES survey measures of emotion cannot discriminate between emotional *traits* and emotional *states*. In the NES survey measures, the cause of the emotions felt about candidates is indeterminate. Did a specific event, statement, or crisis cause people to respond that a presidential candidate has made them feel anxious or is that individual more likely to feel anxious about all of politics? The theory upon which predictions have been drawn for the political realm is based on the manipulation of emotional *states* (Marcus and MacKuen, 1993). For this reason, we also focus our measures on emotional states.

best for overcoming problems of causal inference, albeit with some sacrifice of external validity. We believe the sacrifice is well worth the cost. In our first experiment, therefore, we induce specific emotions (anxiety, anger, and enthusiasm), using a common psychological technique. Then we measure the impact of these emotions on attention, information seeking, and learning.

Second, few studies trace the entire causal process from realistic threat to emotional response and finally to actual political information seeking and/or learning (but see Hutchings et al., 2006). Examining the entire causal chain is difficult. The manipulation of the threatening stimulus must be precise so we can be confident that it is triggering different emotions and not simply delivering different informational content.

Third and finally, extant research has been forced to use fairly indirect measures of information seeking. Survey interviewers must usually ask respondents how much they *intend* to pay attention to the campaign or how often they read about or watch the campaign in the news media. The concern here is that while emotions might boost the intention to seek out new information it might not boost actual information seeking. This is because political information seeking can be costly in terms of time, effort, and economic resources (i.e., paying for a subscription to a newspaper, magazine, or certain news websites). Given the possibility that negative emotional states such as fear may enhance the motivation to learn but undermine the ability to encode new information, it is important to measure actual information seeking. In our two studies, respondents seek information in a realistic environment: a World Wide Web interface we designed to mirror the web pages of the candidates running for President in the 2004 election and a newspaper website offering special coverage of the presidential election.

The Internet differs from previous information sources in several important ways, most notably in its flexibility and interactivity. This flexibility opens up the possibility for targeted searching, focused for example on particular issues across a diverse set of sources. In other words, anxiety might increase search *efficiency* as opposed to total search *volume* (Eysenck, 1992). While anxiety might boost the total amount of information seeking when it is not possible to do targeted searching, it might actually reduce total search volume when targeted searching is possible. These concerns all relate to the general challenge faced by researchers interested in the impact of emotions in politics: to translate specific processes described by theories of emotion into predictions about complex political environments, cues, and behavior.

Hypotheses

As the above discussion indicates, existing work has returned somewhat contradictory results in examining the political impact of negative emotions. In this paper, we hope to address three questions that arise from the existing debate. First, which specific emotions enhance or undermine political attention, informa-

tion seeking, and learning? We expect high-arousal emotions of any kind (anger, anxiety, enthusiasm) to boost self-reported attention to the campaign. High-arousal negative emotions enhance attention to the political environment because individuals are motivated to identify and evaluate the source of the negative emotion. Positive emotions may also boost attention, since they suggest to the individual some form of reward may come (or has already come) from engagement with the environment.

We also expect that anxiety but not anger or enthusiasm should enhance the quantity and/or quality of information seeking. This prediction stems from the expectation that both anger and enthusiasm encourage reliance on standing decisions and predispositions and may therefore undermine the need for new information. Fear, on the other hand, focuses attention on new information. However, whether the quality or the quantity of information seeking will be enhanced by fear may depend on the structure of the information environment itself: When it is possible to focus on particularly relevant information without doing a broad search, more focused seeking strategies should be employed.

We further predict that anxiety, but not anger, enthusiasm, or even disgust, should mediate the impact of political threats on information seeking and learning. Only anxiety is theoretically expected to enhance the motivation and concentration necessary to seek out and encode new information.

Study 1

Our first study was conducted in the computer lab at the University of Michigan from October 14 to November 1 of 2004. Our sample size was 408, but was not representative of the nation as a whole. There is variation along race (38% nonwhite) and gender (57% women), but Republicans are underrepresented (19%). There were no significant differences across cells of the design in the proportion of these sociodemographic and partisan variables. The differences we observed between conditions can be attributed to the stimuli.

Subjects were recruited with flyers in the downtown area, at local businesses, and in university office buildings. Respondents were informed that they would receive $10 for answering questions about media habits and current events. Subjects solely interacted with the computer to minimize interviewer bias. Participants completed a pretest questionnaire that included questions on media information, partisanship, and values. They were then randomly assigned to one of four conditions: three designed to induce a specific emotional state and a control condition designed to reduce all emotional arousal.

To induce an emotional state, we used a technique common to social and cognitive psychological studies of emotion (Bower, 1981; Isbell & Ottati, 2002; Lerner & Keltner, 2001), where subjects are asked to recall and focus on events, people, or occurrences that caused them to experience a given emotion. We modified this task so that people would focus on emotions caused by the campaign

that was taking place. Subjects were asked via the computer to respond to the following query:[3]

> "Now we would like you to describe something during the current campaign that made you feel (angry/afraid/enthusiastic). Please describe how you felt as vividly and in as much detail as possible. Think about the candidates running for office, the issues in this year's election, and real world events. Examples of things that have made some people feel (anger/afraid/enthusiastic) are statements made by candidates, speeches given during the party conventions, and things said during the debates. It is okay if you don't remember all the details, just be specific about what exactly it was that made you (angry/afraid/enthusiastic) and what it felt like to be (angry/afraid/enthusiastic). Take a few minutes to write out your answer".

The response length was unrestricted, and subjects were instructed to take a few minutes to write down anything about politics that made them feel the assigned emotion.[4]

After completing this task, participants were given the opportunity to visit the websites of the presidential candidates in order to learn about the campaign. These websites were designed to mimic those of the actual major party candidates. Subjects were allowed to choose which website they wanted to visit and were allowed to switch back and forth between candidate websites to compare information. Our version of the Internet was closed, so subjects could not click away to visit other information on the Web. While subjects were forced to choose at least one web site to view (by clicking on one or the other campaign logos), they were allowed to end their information search immediately after choosing a candidates' page. On average, however, subjects spent nearly 60 seconds searching for information online and a significant proportion of the sample spent five minutes or more on the candidates' pages. The websites were standardized: information on

[3] For the relaxed condition, subjects responded to the following query: "Now we would like you to describe something that recently made you feel relaxed. Please describe how you felt as vividly and in as much detail as possible. It is okay if you don't remember all the details, just be specific about what exactly it was that made you relaxed and what it felt like to be relaxed. Take a few minutes to write out your answer." Our choice to avoid mentioning politics in this control condition was intentional, but not without risks. We are manipulating both emotions as well as thoughts about politics in general. However, since we attempted to trigger several distinct yet high arousal emotions, and our hypotheses have different predictions among these, we felt this was the appropriate strategy.

[4] One concern with our procedure is that the particular thoughts brought to mind to generate distinct emotions were different for different people. This raises the possibility that the substantive content of these thoughts, not necessarily their emotional impact, produced the results we report. The fact that we did not focus people's attention on any particular political object, however, meant that people probably recalled the emotion first and then reported what it was that caused the emotion. Nonetheless, the linkage between accessibility-based priming effects and the emotional effects we are exploring here is well worth further attention.

both websites was organized into issue based and biographical information of the candidates. Software was designed to track exactly which pages were being visited, in which order, and for how long. This technique allows us to observe the impact of the emotional manipulation on the nature and extent of information seeking.[5] After leaving the web, subjects answered an extensive posttest questionnaire that included questions about political interest.

Anger, anxiety, and enthusiasm are dummy variables, where 1 = subjects in the treatment condition and 0 = subjects in the relaxed condition. In order to control for variation in the ability to use computers or surf the web, we controlled for prior internet experience.[6] *Internet experience* is measured by asking subjects "Other than for e-mail, how often do you use the Internet?" Responses ranged from 0 (Never) to 6 (More than once a Day).[7]

Attention to the Campaign is assessed separately for each candidate. Subjects were asked to self-report how much attention they intended to pay to each presidential candidate. *Follow the Debates* is measured with an item inquiring how closely respondents planned to follow the presidential debates.[8] *Total time* is the sum of the time spent (in seconds) on all candidate web pages. *Total issue time* is the sum of the time spent (in seconds) on each candidate issue-focused webpage. *Total bio time* is the sum of the time spent (in seconds) on each biographically focused webpage. *Total time per page* is the total time subjects spent on each web page.

Results for Study 1

Ours is a relatively new procedure for inducing emotions in politics, so we performed manipulation checks to determine whether it worked. The results are included in the appendix. The tests included a content analysis of the written responses to the induction to determine whether information recalled by subjects might reasonably trigger the intended emotion. The results suggest that the task discreetly induced anger, anxiety, and enthusiasm. Note these manipulation

[5] Immediately prior to the information search, a random half of the sample was told that they would be asked to defend their vote choice, while the remaining subjects were not warned. The notification read: "After reading about the presidential candidates on the web, we will ask you to defend your choice in this year's presidential election. In other words, we will ask you why you think your candidate is a better choice than any other candidate running for president. If you don't think either of the two leading candidates is a better choice than the other, you will be asked to defend that opinion as well." This *warning* manipulation did not have any significant impact on the results reported here, so the conditions were pooled across this factor.

[6] There were no significant differences between the emotion induction conditions on previous internet experience.

[7] The sample was quite experienced with the Internet, with 78% of subjects using the Internet for nonemail purposes more than once a day.

[8] The presidential debates had taken place before this study was fielded. We kept these items nonetheless, on the assumption that most respondents would not know whether additional debates would take place. These items therefore tap a general positive orientation to learn more about the candidates.

Table 1. The Impact of Emotional States on Attention to Politics

	Attention to the Kerry Campaign?	Attention to the Bush Campaign?	Follow the Debates?
	(1–5)	(1–5)	(1–4)
	β (s.e.)	β (s.e.)	β (s.e.)
Anger Condition	.14	.13	.30**
	(.16)	(.17)	(.14)
Anxiety Condition	.41**	.44**	.28**
	(.16)	(.17)	(.13)
Enthusiasm Condition	.28*	.32**	.16
	(.16)	(.17)	(.14)
Internet Experience	.02	.05	.03
	(.35)	(.34)	(.05)
Constant	3.40***	3.09***	2.61***
	(.31)	(.33)	(.27)
R^2	.02	.02	.02
N	405	403	406

*p ≤ .10; **p ≤ .05; ***p ≤ .001 (all by two-tailed tests.)

Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses. The dependent variables were assessed by asking subjects to self-report how much they intended to pay attention to each presidential candidate's campaign, and how closely they planned on following the presidential debates. Attention to the campaigns was measured with a 5 point scale than ran from 1 = "none at all" to 5 = "A great deal". Following the debates was measured with a scale that ran from 1 = "Not closely at all" to 4 = "Very closely".

checks were not used in the analyses that follow. We are interested in the impact of the emotion dummies represented by the induction procedure described above.

We first examine the impact of emotions on attention to the campaign. Our findings are displayed in Table 1. The first column suggests the impact of each emotion condition on attention to John Kerry's presidential campaign, controlling for Internet experience, age, and education.[9] We find all three emotions positively influence attention to Kerry's campaign, but only anxiety and enthusiasm reach statistical significance, with anxiety producing the largest effect. The identical pattern emerges for attention to Bush's campaign, with anxiety again producing the largest increase. The results for following the debates were slightly different, with anger producing a large and statistically significant increase, and enthusiasm dropping to an insignificant (though still positive) effect. In summary, all three emotions exerted a positive impact on self-reported attention to the

[9] Because subjects were randomly assigned to the emotional conditions, these statistical controls are technically unnecessary. They are included as important predictors of political knowledge and information seeking and excluding them does not alter the results substantively or statistically.

Table 2. Impact of Emotions on Overall Search Volume

	Total Time	Issue Time	Bio Time
	β (s.e.)	β (s.e.)	β (s.e.)
Anger Condition	−56.34**	−56.16**	11.27
	(25.34)	(24.39)	(25.18)
Anxiety Condition	−30.86	−30.64	14.24
	(25.03)	(23.63)	(24.29)
Enthusiasm Condition	−13.99	−21.28	41.85
	(25.12)	(23.45)	(25.89)
Internet Experience	48.05	7.46	−20.53
	(51.07)	(55.22)	(63.51)
Constant	132.55**	148.06**	83.02
	(49.82)	(53.12)	(63.14)
R^2	.02	.02	.02
N	395	269	137

*p ≤ .1; **p ≤ .05; ***p ≤ .001 (all by two-tailed tests.)
Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses.
Total time is the sum of the time spent (in seconds) on all candidate web pages. Total issue time is the sum of the time spent (in seconds) on each candidate issue-focused webpage. Total bio time is the sum of the time spent (in seconds) on each biographically focused webpage.

campaign, but anxiety had the largest and most consistent effect. These results support the first hypothesis quite strongly.[10]

We now shift our attention to information seeking. We first regressed the three emotion dummies on measures of total information seeking, issue-based information seeking, and information seeking about the candidates' personal biographies. Table 2 displays the findings. Anger significantly suppresses the time spent seeking information (−57.82, $p < .05$). Anxiety and enthusiasm also show negative coefficients, reducing time spent by 30.46 and 14.6 seconds, respectively, but these do not approach statistical significance. When we look solely at information seeking on the issue versus the biographical pages of the candidates' websites, we see that the impact of anger is located almost entirely on pages containing the candidates' issue positions. Subjects in the anger condition spent nearly a minute less perusing the candidates' issue pages than subjects in the control (relaxed) condition. Anxiety and enthusiasm do not significantly alter time spent on the issue pages, though the coefficients are negative as before. None of the emotions had a significant impact on time spent on the biographical pages, but all the coefficients

[10] It is possible that some of the increased interest among all emotion conditions was due to the fact that the control condition did not focus the respondent's attention on politics while the emotion conditions did. This would not, however, account for differences in interest between emotional conditions.

Table 3. Impact of Emotions on Time per Page Searched

	Total Time per Page	Total Time per Issue Page	Total Time per Bio Page
	β (s.e.)	β (s.e.)	β (s.e.)
Anger Condition	–6.71**	–7.88**	–6.61
	(2.50)	(4.03)	(6.74)
Anxiety Condition	–2.34	2.28	–1.16
	(2.47)	(3.91)	(6.51)
Enthusiasm Condition	–.72	–.17	2.91
	(2.48)	(3.87)	(6.94)
Internet Experience	–5.31	–18.82**	–9.06
	(5.05)	(9.12)	(17.01)
Constant	33.41***	46.53***	41.68
	(4.92)	(8.78)	(16.92)
R^2	.03	.04	.02
N	395	269	137

*p ≤ .10; **p ≤ .05; ***p ≤ .001 (all by two-tailed tests.)

Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses. Total time per page is the total time subjects spent on each web page.

were positive. Thus, the anger-induced reduction in total search time is accounted for by the suppression of issue-based searching. Next we determine whether declines in total information seeking might mask a more refined search strategy.

One clue that anxiety may refine and focus information seeking as opposed to simply depressing it appears when we look at the time respondents spent *per page* visited. We would expect that while anger and enthusiasm might reduce the amount of time people spent on every page, anxiety should not because it might boost the amount of time spent on particular pages while directing attention away from others. We tested a model where time spent per page visited was regressed on the emotional conditions. Table 3 shows that subjects in all three emotion conditions spent less time per page, but only the anger effect (–6.69, $p < .05$) reached statistical significance. Anger reduced time per page by nearly 7 seconds, representing about a 20% drop in the average time spent on each page.

Since we are interested in the quality of information seeking, we further divided search behavior up into time spent on issue versus candidate bio pages. While it is certainly the case that biographical information can provide citizens with valid means for judging how well a candidate will represent them, democratic theory usually insists that citizens understand where the candidates stand on the most pressing issues of the day. When we focus specifically on the time people spent per *issue* page visited, we see that anger again had a depressive effect, but anxiety and enthusiasm did not. While anger reduced time spent on each issue page by nearly 8 seconds, the impacts of anxiety and enthusiasm were indistinguishable from zero. Thus anger suppressed information seeking especially on pages dedicated to the issues stands of the candidates. Though anger reduced time spent on biographical

pages as well, this effect does not approach significance. We cannot make much of the difference in the impact here, because the coefficients for anger on issue versus biographical seeking are quite similar in size. The impact of anxiety (and enthusiasm) is less clear. Our hunch about the null results on anxiety is that its effects might be more nuanced than those of anger. If anxiety enhances concentration and focuses the mind on information most relevant to the threat, then there may be a tradeoff between general search time and searching for specific information. Anxiety, in other words, might reduce information seeking breadth, but increase the depth of information seeking on particular topics. Another interpretation of this result is that anxiety merely increased *processing* time, perhaps because negative affect is generally distracting and uses up cognitive resources. Some research suggests that information processing is enhanced at low to moderate levels, but falls off at higher levels of the emotion (Calvo and Carreiras, 1992; Hebb, 1955; Tohill and Holyoak, 2000). If so, we might expect longer search times but no concomitant enhancement of the *quality* of the search as a means of gathering and encoding information. Testing this hypothesis requires a second study.

The previous results show that when people feel angry, they are less likely to seek out new information. The results for anxiety and enthusiasm are, however, less clear. These findings from the first study are also unsatisfying because they depend on a somewhat unrealistic emotion induction procedure that may not reflect what happens in reaction to a real-world political threat. It is critical for us to replicate these findings in another, more realistic design. In addition, if our speculation that anxiety might improve the quality of information seeking but not its quantity is true, we should also be able to measure the consequences of that effect for political learning. Our second experiment can help address these points.

Study 2

Our second study was designed to replicate the findings from Study 1 using a realistic political threat as the initial emotional stimulus. Our goal was to trace the entire causal sequence from political threat to emotional response to information seeking and learning online. Our prediction in this study was that anxiety, but not other emotions, should mediate the relationship between threats and information seeking and learning. In this study, we also presented a different information environment to the respondent: a "special online edition" of local newspaper coverage of the presidential campaign. Our expectation in this case was that it would be more difficult to filter or select particular types of information or political views because newspaper web pages often mimic the layout of the offline versions: The most important information is on the first page, and stories are not hyperlinked in a way that makes comparisons across particular issue dimensions easy. Without partisan cues or an issue-based categorical arrangement of information, we expect anxiety to trigger a broader search (as opposed to a more refined one as in the previous study).

As with the first study, the second study was conducted in a computer lab at the University of Michigan from August to September of 2004. Our total sample size was 101. The sample was 45% women, 22% Republican, 57% Democratic, 21% Independent, and 18% nonwhites. There were no significant differences across cells on sociodemographic and partisan variables. Since this was a nonstudent sample, however, we included control variables of education, age, and Internet experience throughout the analyses that follow.

Subjects were recruited with flyers in downtown areas, at local businesses, and in university office buildings. Respondents were informed that they would receive $10 for answering questions about media habits and current events. As with the first study, subjects interacted solely with the computer to minimize interviewer bias. Participants completed a pretest questionnaire that included questions on media information, partisanship, and values. They were then randomly assigned to one of two conditions that manipulated a political threat.

To manipulate threat, subjects were required to read an AP newspaper article that depicted John Kerry behind in the polls and quoted sources arguing that a Republican victory would be detrimental to the middle and lower class. For example, the text reads "(P)olls show that Bush has established a substantial lead in several battleground states such as Florida, Ohio, and Pennsylvania. Perhaps as a result, Democratic officials are stressing the negative impact of a Republican victory on wages and employment among middle and lower income Americans." The "low threat" condition depicted John Kerry as ahead in the polls and a Democratic victory as beneficial to the middle and lower class. In one passage, the reporter writes "(P)olls show that Kerry has established a substantial lead in several battleground states such as Florida, Ohio, and Pennsylvania. Perhaps as a result, Democratic officials are stressing the positive impact of a Democratic victory on wages and employment among middle and lower income Americans." This threatening message is targeted at Democratic and/or liberal respondents, who are the majority of our sample. In the following analyses, therefore, we exclude Republicans. As we would have expected our stimulus did not produce significant negative emotions, nor did it enhance information seeking among the 20 Republicans in the sample.

Following the stimulus, respondents were asked how the story they just read made them feel. For example, they were asked "How (anxious/worried/angry/hopeful/proud/happy/disgusted) did the article make you feel? Did it make you feel very (emotion), somewhat (emotion), a little (emotion), or not at all (emotion)?" We combined "anxious" and "worried" to produce a measure of anxiety. We combined "hopeful," "proud," and "happy" to measure enthusiasm.[11] Anger and disgust were both measured with a single item.

[11] The decision to combine these items as we did is consistent with previous research (Watson, Clark, & Tellegen, 1988). However, we performed a factor analysis on these five items to determine if they did indeed separate into two distinct factors. They did. The results of this factor analysis are included in Appendix Table A2.

Table 4. Threats Trigger Emotions

	Anger	Anxiety	Enthusiasm	Disgust
	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)
Threat	.31***	.28***	−.20***	.39***
	(.06)	(.05)	(.04)	(.06)
Internet experience	.15	.03	.06	.13
	(.10)	(.09)	(.07)	(.11)
Age	.02	.06	.07	.06
	(.19)	(.16)	(.13)	(.20)
Education	−.26	−.20	−.08	−.38*
	(.20)	(.17)	(.14)	(.21)
Constant	.44**	.47***	.47***	.53***
	(.16)	(.13)	(.10)	(.16)
R^2	.27	.30	.31	.36
N	76	73	71	69

*p ≤ .10; **p ≤ .05; ***p ≤ .001 (all by two-tailed tests.)

Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses. The dependent variable is coded 0–1 with higher values corresponding to greater emotion felt about the article the respondent read. All independent variables are coded 0–1. Republican respondents are excluded from these analyses because the threatening stimulus did not target them.

After answering questions about their emotional reactions to the story, subjects were given the opportunity to visit a newspaper's website in order to learn about the candidates. This website mimicked the actual Detroit Free Press website. The Internet environment was closed, so subjects could not click away to visit other information on the Web. On average, subjects spent nearly 130 seconds searching for information online. The news articles on this site were standardized so each story was of roughly equal length, but the stories themselves were otherwise drawn directly from actual news coverage. There were a total of 14 different news stories on the website.[12]

Study 2 Results

Our first question was whether our threat stimulus heightened negative emotions (and suppressed positive ones). Table 4 suggests that it did. The threatening story caused people to feel significantly more angry, anxious, and disgusted than the non-threatening story. The story also depressed enthusiasm. These were

[12] Though we did not specifically tell subjects they could skip the information seeking task, 8 subjects exited the newspaper home page before viewing a story. Because they could not have learned any information from the news environment, these subjects were excluded from the analyses of learning.

Table 5. Anxiety Mediates the Impact of Threat on Information-Seeking Breadth

	Unique Pages Viewed				
	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)
Threat	**1.23****	**.73**	**1.15***	**1.08**	**1.27***
	(.54)	(.64)	(.63)	(.67)	(.68)
Anxiety	–	**2.29***	–	–	–
		(1.26)			
Anger	–	–	**.39**	–	–
			(1.06)		
Enthusiasm	–	–	–	**–.60**	–
				(1.75)	
Disgust	–	–	–	–	**.02**
					(1.03)
Internet Experience	.73	.31	.55	.79	.61
	(.92)	(.92)	(.94)	(1.00)	(.94)
Age	–2.52	–2.70	–2.37	–2.24	–2.37
	(1.68)	(1.68)	(1.70)	(1.84)	(1.70)
Education	1.39	2.23	1.61	1.11	1.51
	(1.77)	(1.78)	(1.81)	(1.95)	(1.83)
Constant	1.42	.41	1.18	1.82	1.35
	(1.38)	(1.49)	(1.47)	(1.65)	(1.50)
R^2	.13	.18	.13	.11	.13
Sobel Test		**1.73***	**.37**	**.34**	**.02**
N	77	73	76	71	76

*p ≤ .10; **p ≤ .05; ***p ≤ .001 (all tests are two-tailed.)

Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses. The dependent variable is a count of the number of unique pages viewed during the information search. All independent variables are coded 0–1. Republican respondents are excluded from these analyses because the threatening stimulus did not target them.

substantial effects, with the threat condition boosting negative emotions 24% to 33%, and depressing positive emotions by about 14%.

The next important test is whether the threat stories altered patterns of information seeking, and whether particular emotions mediated those effects. Table 5 reports the results of these tests. Here our dependent variable is the number of different news articles that the respondent chose to read. We focus on this measure of search "breadth" because our prediction is that anxiety in an environment that is free of partisan or issue cues will boost overall search volume. In the first column, we find the threatening story led people to read a significantly larger number of the articles available to them. Compared with the low threat condition, those who read the threatening article viewed more than one additional article.

The remaining columns in Table 5 test for the mediating role of emotions in the impact of threats on information seeking. The standard test for mediation first

requires that the independent variable (threat) affects the dependent variable (information seeking). Second, we must observe that the independent variable significantly affects the mediator, which we have shown to be the case in Table 4. Third, the mediator must significantly affect the dependent variable when the independent variable is controlled. Finally, the relationship between the independent variable and the dependent variable must be reduced significantly when the mediator is in the model (Baron & Kenny, 1986). In Table 5, conditions 3 and 4 are met for anxiety, but not for any other emotion. The Sobel test at the bottom of the table indicates that only anxiety mediates the relationship between threat and information seeking. The relationship between threat and information seeking is not reduced when anger, enthusiasm, or disgust are included in the model. In summary, anxiety carries the causal impact of threats on information seeking, as predicted.

Our final test is to determine whether threats boost learning as a result of the anxiety they produce. It is possible that increased information seeking was a manifestation of motivation, but not ability, to acquire new information. Increased seeking, then, would not be accompanied by increased information retention. Table 6 displays the results for this final test. The measure of learning in this study was the number of correct answers to a 14-item, true-false battery of questions dealing *directly* with the information presented in the newspaper articles present in the online edition of newspaper coverage of the campaign.[13] The distribution of correct answers was positively skewed, so we collapsed those who answered three or more correctly into one category. The final variable, then, contained 4 levels (0, 1, 2, and 3 or more correct answers). The questions were designed to be somewhat difficult to answer correctly without reading the articles, so we are confident that changes in the scores on this test are indicative of actual learning and not simply improved guessing ability.

In the first column of the table, the threatening article significantly boosts correct responses to the questions about the information presented to them earlier. The second column indicates that anxiety mediates this effect, with the impact of the threat variable becoming statistically insignificant once anxiety is controlled. The Sobel test for mediation was again statistically significant. Anger, enthusiasm, and disgust once again failed to mediate the effect of the threatening message on information seeking.

Conclusions

This paper extends the existing literature on emotions in politics in several ways. First we examine anxiety as the psychological mechanism underlying the

[13] One question asked "True or false, a recent poll shows that a majority of Muslim Americans support George W. Bush for reelection." A second asked "True or false, U.S. worker productivity grew last quarter at the fastest pace in a year." A third asked "True or False, John Kerry feels that the United Nations should have much less authority in overseeing Iraq's political transition."

Table 6. Anxiety Mediates the Impact of Threat on Learning

	Correct Answers in Learning Test				
	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)
Threat	**.49*** (.29)	**.21** (.33)	**.48** (.34)	**.74*** (.35)	**.58** (.36)
Anxiety	–	**1.20*** (.63)	**–**	**–**	**–**
Anger	–	–	**.03 (.55)**	–	–
Enthusiasm	–	–	–	**1.39 (.92)**	–
Disgust	–	–	–	–	**–.23 (.54)**
Internet Experience	.29 (.54)	.11 (.53)	.28 (.54)	.26 (.55)	.30 (.54)
Age	.01 (.92)	–.08 (.89)	.01 (.92)	–.01 (.94)	–.01 (.92)
Education	1.09 (1.04)	1.42 (1.02)	1.01 (1.05)	1.19 (1.06)	1.05 (1.05)
Constant	.15 (.70)	–.38 (.73)	.13 (.74)	–.56 (.81)	.26 (.75)
R^2	.10	.16	.10	.14	.11
Sobel Test	–	**1.80***	**.05**	**–1.44**	**–.43**
N	67	66	67	64	67

*p ≤ .10; **p ≤ .05; ***p ≤ .001 (all tests are two-tailed.)

Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses. The dependent variable is a count of the number of correct answers to a set of 14 true-false questions relating directly to the articles available to respondents during their information search, coded 0, 1, 2, and 3 or more correct answers. All independent variables are coded 0–1. Republican respondents are excluded from these analyses because the threatening stimulus did not target them.

linkages between political threats and information seeking. While strong emotions can enhance attention, they might also interfere with information seeking by distracting people from the task at hand. Most previous studies of political information seeking or learning, however, could not strongly establish the causal impact of emotions on these outcomes. Our goal was to examine these claims experimentally, first by inducing specific emotional states and measuring their impact on information seeking, and then by manipulating realistic threats and examining their impact on emotional reactions and subsequent information seeking and learning.

In our first experiment we found that several emotions seemed to increase interest in the campaign. Anxious, angry, and enthusiastic subjects claimed they

were more interested in the presidential campaigns and would pay closer attention to the debates compared to those in the control group. Anxiety produced the strongest impact on attention. However, all three emotional states led subjects to take *less* time looking for information that was made available to them. This depressive effect was largest and statistically significant for anger. Furthermore, the reduction was largest for the kind of information ostensibly most useful: candidate issue stands.

There are two possible explanations for the negative effect of anger on overall search volume observed in the first experiment. First, despite the self-reported increases in interest, anger might distract people during complex cognitive tasks. This distraction might suppress information seeking. So even though people claim to be more interested they are less able to concentrate on the task at hand and so cannot collect relevant information. The alternative hypothesis is that this decline in total information seeking indicated a focusing effect. This was our prediction for anxiety but not for anger. Further exploration supported our original hunch: Anger suppressed information seeking broadly, both in terms of total time spent in the information environment, and in terms of time spent on each particular page. The biggest declines for angry respondents were on the pages discussing the candidates' stands on issues. Anxiety, however, had no significant effect on time spent on the candidate issue pages. This evidence hints at the possibility that anger and anxiety work differently in politics.

Our second experiment replicated the results of the first and also suggested that typical campaign coverage can trigger powerful emotions. The information seeking pattern produced by anxiety in this second study, however, was broader than in the first. One important conclusion is that predictions about the relationship between emotional states and information seeking behaviors are not always straightforward. Under certain conditions, anxiety may suppress overall information seeking by focusing attention on a smaller subset of relevant information. In other environments, like the online news site designed for the second study, it is more difficult to search a narrow range of issues. In that case, anxiety may boost overall search volume. Anger, however, and to a lesser extent enthusiasm, do not enhance the quantity *or* quality of information seeking, nor do either of these emotions facilitate learning.

How can these results be reconciled with the findings of Huddy and Feldman (n.d.), who argue that anxiety boosted attention and interest post-9/11, but reduced learning about the war in Iraq? One possible answer is that survey measures of anxiety are picking up a combination of trait and state-level emotional reactions. It is quite possible that long-term dispositional anxiety about a political event such as 9/11 might actually interfere with learning. Temporary anxious states, however, may help to focus attention on information immediately available, leading to increased searching efficiency and learning. Furthermore, we know that the experiences of anger and anxiety often co-occur. If anger generally causes avoidance, then in many real-world conditions we might not observe a positive correlation

between anxiety and learning (because of the simultaneous distracting effects of anger). In other words, people either cannot or do not accurately self-report the unique experience of anxiety separate from anger in reporting their feelings about the attacks of 9/11. When we separate the effects of anger and anxiety by independently inducing them, however, we observe the positive effects of the latter.

Another possibility is that Huddy and Feldman (n.d.) are correct in their speculation that the particular trigger for anxiety is important. They argue that when anxiety is produced by personal vulnerability or concerns about personal safety, people will become more distracted and less able to focus on new information and retain it for future use. The kind of anxiety that Marcus et al. (2000) focus on, tapped by self reported concerns about particular politicians, is not of this type, and so might be less likely to impair learning. Our findings confirm this pattern.

Our emotion induction task that prompted respondents to focus on anything about politics that made them feel anxious, angry, or hopeful permitted the widest possible range of emotional triggers. Each individual was encouraged to focus on the aspects of politics that made them personally feel these emotions. We coded the open-ended responses to the emotion probe to determine the frequency of statements relevant to Iraq or terrorism. Fully 40% of respondents in the fear condition mentioned Iraq or terrorism among the things that made them anxious about politics in general. However, the learning effects we observed are not reduced when we run the analysis on only those who expressed anxiety about Iraq or terrorism. The study suggests that anxiety triggered by a broad range of sources refines can refine political information seeking and boost political learning.

Wars and terrorist attacks that cause individuals to feel personally vulnerable are relatively rare events. We are interested in triggers for anxiety that are more common, the kind that might come to mind on any given day. In fact, given that sociotropic concerns seem to be generally more powerful determinants of political attitudes than are individual interests (Kinder and Kiewiet, 1981), less personal sources of anxiety may also be more common in politics. The motivation here was to contribute to a theory of emotions in politics that is generalizable across a wide variety of circumstances. The major finding is that anxiety can boost learning, while anger may lead people away from the kind of deliberation many democratic theorists cherish. Therefore, concern about fear mongering in politics may be at least somewhat overblown. On the other hand, we do see significant and deleterious effects of political anger on information seeking. Outrage, perhaps, is more damaging than fear if we hope to foster an informed citizenry.

Appendix

To test the validity of our experimental manipulation we examine the degree of emotion expressed in the open-ended responses to each condition.[14] The *intensity of emotion* expressed in the open-ended responses is assessed by graduate research assistants who were unaware of the design. Two coders read each response to the emotion query and assessed the degree of enthusiasm, fear, or anger expressed. The values assigned were 0 (None), 1 (Some), and 2 (Extreme). The assigned values were then tested for intercoder reliability, and all met or exceeded standard levels of acceptability (>.75).

The results of our test are displayed in Table A1. Each column represents a separate regression equation where the degree of emotion expressed is regressed on dummy variables for each treatment condition. Here we hoped when we asked people to focus on anxiety, the things they wrote about could be identified as anxiety producing by coders who did not know which condition they were assigned to. Each manipulation performed in the expected manner. In each condition, the subjects expressed the expected emotion most strongly (Anger, 1.69, $p < .001$; Anxiety, 1.64, $p < .001$; Enthusiasm, 1.29, $p < .001$).

Table A1. Emotional Intensity in Open-Ended Responses to Manipulation

	Intensity of **Anger** Expressed	Intensity of **Anxiety** Expressed	Intensity of **Enthusiasm** Expressed
	β **(s.e.)**	β **(s.e.)**	β **(s.e.)**
Anger Condition	**1.69*** **	.13**	–.10
	(.09)	(.06)	(.09)
Anxiety Condition	.61***	**1.64*** **	.00
	(.08)	(.06)	(.09)
Enthusiasm Condition	.28***	.01	**1.29*** **
	(.09)	(.06)	(.09)
Constant	.02	.01	0.11
	(.06)	(.04)	(.07)
N	401	401	401

*p ≤ .1 (two-tailed test) **p ≤ .05 (two-tailed test) ***p ≤ .001 (two-tailed test)

Note: Entries are unstandardized OLS regression coefficients and the standard errors are in parentheses. The dependent variable, degree of emotion expressed in the open-ended responses, was coded as a scale that runs from 0 (No emotion) to 2 (extreme).

[14] Open-ended responses were coded by two graduate student coders who were unaware of which condition each respondent was in.

Table A2. Factor Analysis of Emotional Reactions to Newspaper Article: Unrotated Solution

Emotional Reactions	**Factor 1:**	**Factor 2:**
Anxious	–.34	.85
Worried	–.47	.78
Happy	.89	.15
Proud	.82	.35
Hopeful	.84	.28
Eigenvalues:	2.50	1.54
Variance Explained	50.03	30.82

Entries are drawn from the component matrix: Principle Components Extraction utilized.

The manipulation, however, was not perfect. The first column displays the degree of anger expressed in each condition. Regardless of which emotion we asked subjects to focus on, at least some anger could be identified in their responses. Anxiety (displayed in the second column) also appears slightly elevated in the anger condition (.13, $p < .05$), but not in the enthusiasm condition. Enthusiasm is only expressed in the enthusiasm condition. Despite these deviations from a perfectly clean manipulation, Figure A1 shows that overall the emotional content of responses corresponds very closely to that which was intended.

We examine word count in order to determine how much people have to say about events that made them angry, afraid, or enthusiastic. In Figure A2 we find that people have more to say when asked what makes them angry or anxious about politics than when asked what makes them enthusiastic about politics. This means that our manipulation was successful in producing the intended emotions, but those emotions may not have been experienced with the same intensity. In comparing the results from Table A1 and Figure A2, we see more evidence that enthusiasm was cued less intensely than either anger or anxiety. So while we would like to make strong claims based on this manipulation of emotional states, we must also be cautious in remembering that the intensity of the emotion experienced is not constant across conditions.

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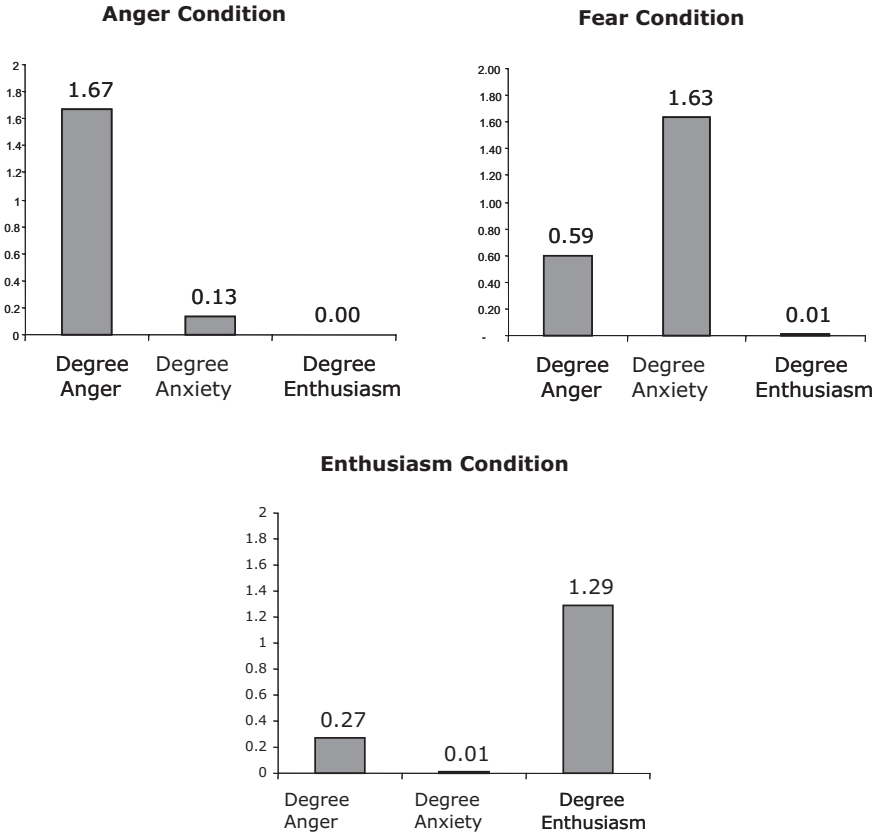

Figure A1. Relative Impact of Manipulations on Emotion Expressed
Note: The Y axis represents the intensity of the coded emotional response, which runs from 0 (emotion not expressed) to 2 (emotion expressed intensely).

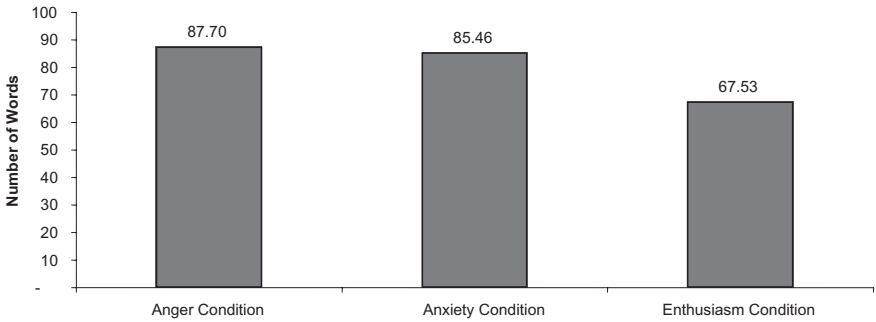

Figure A2. Volume of Expression in Open-Ended Responses to Emotion Manipulation
Note: Entries are the total number of words participants wrote to describe their emotional state.

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