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Healthcare vs. Hawkishness: The Divergent Effects of Affect  
on Context-Driven Shifts in Attitudes

by

Fade Rimón Eadeh

A dissertation presented to  
The Graduate School  
of Washington University in  
partial fulfillment of the  
requirements for the degree  
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Fade Rimon Eadeh

*Washington University in St. Louis*

*May 2017*

## ABSTRACT OF THE DISSERTATION

Healthcare vs. Hawkishness: The Divergent Effects of Affect on  
Context-Driven Shifts in Attitudes

by

Fade Rimón Eadeh

Doctor of Philosophy in Psychological and Brain Sciences

Washington University in St. Louis, 2017

Professor Alan J. Lambert, Chair

There is a tradition of research in affective science suggesting different affective states (e.g., anger vs. anxiety) are associated with relatively unique goals and motives (Frijda, 1986; 1988; Schwarz & Clore, 2007, Lerner & Keltner, 2000; 2001). Although this approach has received considerable empirical support, this work has yet to fully resolve an important issue. For any given type of emotion (say, anger), such feelings can be activated in a variety of different “triggering” contexts. If so, to what extent does the triggering context matter when examining the consequences of that emotion for attitudes? Some findings suggest that context does *not* matter (Johnson & Tversky, 1983), whereas others imply that context *should* matter (Frijda, 1988; Smith & Ellsworth, 1985). In my dissertation, I examine the role of context as it bears on the relationship between affect and judgment, across different threatening contexts (terrorism, healthcare). Across 3 Experiments, I find the role of affect, and its effects on attitudes, are contingent on the context in which the affect is activated. These findings demonstrate that the role of context plays an important role in understanding when, if, and in which direction, affect plays a role in shaping attitudes and behavior.

## INTRODUCTION

Suppose that you just read an article describing the terrorist activities of ISIS, and the role that it has played in the deaths of civilians from around the globe. Other things being equal, such an article is likely to make you angry. This is a fairly trivial assumption. Less trivial, however, is the fact that this experience of anger is likely to have important consequences for the kinds of political attitudes you would endorse. In particular, a general line of research rooted in the “emotional appraisal” tradition in social psychology (Frijda, 1986; 1988) suggests that the experience of anger in this particular context would increase the likelihood that you would endorse relatively “hawkish” policies (e.g., “I support bombing the hell out of ISIS”), even if you would ordinarily find such positions unappealing (Eadeh et al., 2017 Lambert et al. 2010; see also, Lerner, Gonzalez, Small, & Fischhoff, 2003; Sadler, Lineberger, Correll, & Park, 2005; Skitka, Bauman, Aramovich, & Morgan, 2006).

Now suppose that you have become angry for quite a different reason. In particular, imagine that you just read an article about the death of a child, who reportedly died as a result of unethical insurance practices that limited the child’s access to life-prolonging treatment. Again, the idea that such a story would trigger anger is a trivially obvious point. More important, however, is the question of how anger, as activated in this context, might influence your pattern of responses to political attitudes. Would anger from this scenario also trigger pro-hawkish attitudes? Or, alternatively, perhaps the anger might have very different consequences that reflect the circumstances in which it was activated in the first place. In particular, one could plausibly argue that the activation of anger in this context might lead you to support universal health care. This, of course, is quite different from observing an anger-mediated shift in hawkish attitudes.

These considerations raise a more general question that lies at the heart of my dissertation: Would the context in which feelings are activated make a difference in the kinds of consequences these feelings might have on attitudes and judgment? For example, would one expect the anger elicited from the “tragic death of a child” story to *also* lead them to endorse more politically hawkish policies? Or, would one expect to see a rather different set of consequences of that anger state, which has nothing to do with the endorsement of hawkish policies at all?

### **Why This Question is Interesting to Me**

#### **Implications for Theory and Research on Appraisal (Functional) Models**

In the field of affective science, there is a tradition of research suggesting different types of affective states (e.g., anger vs. anxiety vs. sadness) are associated with a relatively unique set of goals and motives (Frijda, 1986; 1988; Huddy, Feldman, & Cassese, 2007; Lambert et al., 2010; Lerner & Keltner, 2000; 2001; Schwarz & Clore, 2007, Skitka et al., 2006). In this dissertation, I refer to this perspective with the general term “appraisal theory,” while acknowledging that other terms are sometimes used (e.g., “functional approach” to affect).<sup>1</sup>

Although there is general support for this general approach (see ahead), there is at least one foundational issue that has not yet been completely clarified, and that issue is directly related to the question I pose above: To what extent does context (i.e., context in which any given feeling is activated) make a difference in the kinds of effects it has on judgment and decision making? My dissertation was conducted, in part, to help resolve this issue.

#### **Theory and Research in Political Psychology**

Research in political psychology has long been interested in the question of whether situational contexts can shift political attitudes, specifically with respect to shifts to the political

right (Jost, Glaser, Kruglanski, & Sulloway, 2003). One of the findings to emerge from this tradition is that, other things being equal, the activation of anger can instigate so-called “shifts to the right,” at least with respect to the kinds of attitudes people have about the use of “aggressive” strategies combatting terrorism (the latter of which is, de facto, an important facet of contemporary American conservatism, Hetherington & Weiler, 2009; Izzett, 1971). This point has been shown using experimental (Eadeh et al., 2017; Lambert et al., 2010; Lerner et al., 2003) as well as correlational (Huddy et al., 2007; Sadler et al., 2005; Skitka et al., 2006) designs.

As I learned about these interesting effects, I wondered if it is *really* the case that anger *always* provokes shifts to the right. Could there be circumstances in which anger could lead people to adopt more *liberal* policies than they otherwise might? As I wondered about this question, numerous ideas and scenarios came to mind that might produce this shift, including the priming of income inequality, the various environmental disasters caused by the energy industry, or the rise of gun-related violence in the States. As I deliberated on these issues, I recognized that targeting unethical insurance practices by the healthcare industry might produce the anger necessary for this liberal shift.

In particular, Alan and I came up with the idea that participants would read (a true story) about a young child who was sick from an advanced form of cancer and whose parents had been denied coverage from their insurance provider for life-prolonging treatment. If participants were reminded of these events, would their anger increase support for greater regulation of the healthcare industry, or perhaps greater support for certain aspects of the Affordable Care Act? (Of course, it could be more complicated such that people might use their anger to reprimand the insurance industry, but not necessarily endorse changes to healthcare policy). Setting aside (for now) these complexities, this represents one foundational question to be addressed by my



dissertation: Is it possible for anger to shift people to the right or left, depending on the context in which this feeling is activated?

### **Surprising Lack of Research Supporting Context Specificity in Affect-Driven Shifts in Attitudes**

As I will discuss in more detail ahead, several studies have shown that the consequences of any given feeling for judgment and decision are *not* sensitive to the context in which it is activated (see especially, Johnson & Tversky, 1983; Schwarz & Clore, 1983; 2007; see also Lerner & Keltner, 2000; 2001). Nevertheless, one might intuitively believe that there would be support for the idea that context *would* matter (see ahead for further discussion of what I mean by context). Somewhat surprisingly, this is not the case. Although many theorists have discussed the possibility that context might matter, I am aware of few if any research that has actually shown this to be the case.

### **Why Anger?**

To reiterate a point made earlier, the primary (although not sole) focus of the proposed research is on anger and its effects on political judgment. This focus in no way implies that anger is the *only* affective state relevant to the aforementioned set of theoretical issues. Nor does it imply that political attitude represents the only domain in which affect can exert a systematic influence on what people think.

It is also worth noting that, among the various types of emotion studied in the appraisal area, anger is one of the more frequently researched emotions (cf. Berokwitz & LaPage, 1967; Bushman & Anderson, 2002; Lambert et al., 2010; Lerner & Keltner, 2000; 2001). This is not surprising, as there is a rich history of scholarly work highlighting the “functional value” of this state on judgment and behavior, not only in the appraisal area, but psychological research more

broadly (see Berkowitz & LaPage, 1967; Bushman & Anderson, 2002). More relevant to current concerns, there already is a fairly well established body of experimental work showing that the activation of anger in the *context of priming terrorist threats* produces reliable changes in people's proclivity to endorse certain types of politically conservative views. By way of contrast—and most critical for present purposes—I am not aware of even one study that has investigated the possibility that anger can instigate either a shift to the right or to the left, depending on the context in which the anger is activated.

In addition to these (theoretically-rooted) advantages to studying anger, there is a programmatic advantage as well. In contrast to other types of negative states (especially, anxiety, and to a lesser extent sadness) anger has a *relatively* low “baseline” in the general population (for a related discussion, see Winkielman, Knäuper, & Schwarz, 1998). This does not mean that people are never angry over the course of their day. However, work in the Lambert lab (see Eadeh et al., 2017; Lambert et al., 2010) has found experimental inductions of anger are *extremely* effective at reliably eliciting meaningful and statistically large manipulations of anger relative to baseline (control) conditions. Of note, the size of this effect is driven, *in part*, by the fact that the baseline level of anger is relatively low in the control condition.

As a final (and related) point, the *absolute* level of anger in the experimental condition in my dissertation is likely to be low-to-moderate in extremity. However, the types of manipulations employed in my dissertation are similar (and, in some cases, identical) to previous manipulations of anger that have generated anger-driven phenomena (e.g., boosts in presidential approval) that parallel effects found in real-life settings. Hence, although one should always be cautious about generalizing experimental findings beyond the context in which they are

generated, the present set of studies were designed in such a way so as to maximize its relevance to real-world concerns.

### **ON THE DEFINITION OF “CONTEXT” IN THE PRESENT RESEARCH**

Before I consider the relevant theoretical issues surrounding the “does context matter?” question, it is necessary to clarify exactly what I mean by context. It may be useful to start off by stating what I *don't* mean. To begin, I am *not* referring to the issue of whether cross-cultural factors can play a role in the experience, expression, and interpretation of any given feeling state (Ekman, 1992; Frijda, 1986; 1988). Nor am I referring to the same scenario, but with a differing emotional perspective. For example, Lerner et al. (2003) reminded all participants of the terrorist attacks of September 11<sup>th</sup>, but ask some participants to consider what part of the event made them angry (or fearful).

These are obviously important issues, but it is not the one that I am concerned with in my research. Nor is my research directly related to recent points made by Barrett, whose interests converge around whether the context affect is activated makes a difference in how that feeling is experienced (i.e., what it “feels” like), and its consequences for neurological activity in the brain (see Barrett, 2013; but see also Wilson-Mendenhall, Barrett, Simmons, & Barsalou. 2011).

Rather, my use of the term context refers to the specific circumstances in which a particular feeling is activated and whether those circumstances should—or should not—matter in terms of the effect of that affective state on judgment and decision making. As I will discuss in more detail ahead, this is a rather important issue when considered in the context of theory and research in a number of related areas, including appraisal theories (Frijda, 1987; Smith & Ellsworth, 1985), the so-called “social-functional approach” to affect (Keltner & Kring, 1998) as well as the role of basic emotions (Ekman, 1992; for a rebuttal, see Ortony & Turner, 1990).

In particular, some theoretical models in this literature—especially, those that tending to focus on moods—tend to take the stance that context does not matter (Johnson & Tversky, 1983; Lambert et al., 2010; Lerner et al., 2003; Lerner & Keltner, 2001; Schwarz & Clore, 1983). On the other hand, other theoretical models in this area would seem to take a stance that context *ought* to matter (Frijda, 1988; Smith & Ellsworth, 1985).

### **A Short Summary of Appraisal Theories**

Although there is an impressive amount of research supporting the general “appraisal” approach in social psychology (see ahead), the field is not without its critics. First, Frijda and Zeelenberg (2001) assert that not all hypothesized patterns of appraisal actually lead to the predicted emotion. As stated by these researchers, not all fear is caused by an anticipation of danger, as some people can be afraid from an oncoming car, whereas others can be afraid from public speaking. There is also a question of causality, as to whether the appraisal pattern informs the emotion, or the emotion informs the appraisal pattern (see Frijda & Zeelenberg, 2001; Moors, 2013). As stated by Moors (2013), “is it a cause or component of emotion?” (p. 134). Fourth, there is a definitional issue raised by Huddy et al. (2007) in that appraisal theory is relatively unclear. Some researchers propose both automatic and deliberative appraisal processes are connected to appraisal, noting that if appraisals can occur outside of awareness, “how can it be measured and differentiated from emotional reactions that also occur outside of awareness?” (p. 210). In total, these are just a small handful of the criticisms aimed at appraisal research, broadly defined.

In a broad manner, the social constructionist approach offered by Lisa Feldman Barrett also criticizes the nature of appraisal theory and the functional theory that came before it (2013; 2014). Most notably, Barrett points out that different contexts of the same emotion are related to

different cognitive activities depending on the context in which the emotion is activated. For example, fear can be defined as a reaction to a proximal physical threat (e.g., an approaching snake) or it can be construed in a social manner (e.g., public speaking). Importantly, these differing contexts produce different patterns of neural activity.

Although Barrett's view is well taken, she defines context in a much different manner than the way I define it. First, her interest is much more grounded in the cognitive and phenomenological experience of differing contexts of the same emotion. Does fear from a snake approaching and fear from public speaking feel the same or different? I believe she is correct in pointing out that the same emotion can induce a different pattern of cognitive responses. Second, the question of whether these different contexts produces changes to judgment and decision-making has been relatively untested in her line of work. This is not at all intended to criticize the importance of her work. Rather, it seems that our interests in the definition of context, along with the level of analysis (cognitive activity vs. attitudes), are markedly different from one another.

Although there are clearly issues of concern about differing aspects of appraisal theory, there has been widespread empirical support for the general idea that patterns of cognitive appraisal are linked to both emotion labeling and a motivational desire to act on these emotions (see Frijda, Kuipers, & ter Schure, 1989; Lerner & Keltner, 2000; 2001; Smith & Ellsworth, 1985). Appraisal is also a heuristically useful way to understand how seemingly related emotions can have markedly different effects on attitudes and behavior. For example, both fear and anger are certainly unpleasant states of affective experience, but they differ in the orientation of their goals, along with levels of certainty and individual control. Fear is typically seen as a goal state that is oriented to flee from danger, whereas anger is construed as a mechanism to approach such environments. Moreover, anger carries a tendency to demonstrate high levels of certainty and

feelings of control, whereas fear produces lower levels on both dimensions (cf. Smith & Ellsworth, 1985).

These dimensional differences are central to research on risk perception. For example, Johnson & Tversky (1983) find that manipulations of anxiety lead to more pessimistic risk perceptions outside of the context that the anxiety was aroused. In contrast anger led to more optimistic judgments (Lerner & Keltner, 2000; 2001); greater support for politically risky decisions (Lambert et al., 2010; Lerner et al., 2003; Skitka et al., 2006); and harsher punishment of norm violators (Goldberg, Lerner, & Tetlock, 1999; Lerner, Goldberg, & Tetlock, 1998).

As is probably clear by now, the present dissertation is most centrally concerned with a diverse line of research, which can be conveniently put under the general label “appraisal theories.” It is important to consider there is no single “appraisal theory” in the social psychological literature. Although Nico Frijda (1986; 1987; 1988) as well as Jennifer Lerner (Lerner & Keltner, 2000; 2001) self-identify their own models as “appraisal models,” a close examination of their models reveals that they make somewhat different assumptions. Whereas the former implies that appraisals will lead to context-specific changes in behavior, the latter implies a tendency to use affective experience both within and outside of the context in which the emotion was elicited.

Nevertheless, these and other appraisal theories do share foundational assumptions, including the view that affect serves clear functions, prioritizing behavior to meet the functions of the observers’ current social and physical environment (Barrett & Campos, 1987; Ekman, 1992, Johnson-Laird & Oatley, 1992; Lazarus, 1991). Indeed, some theorists even believe that basic emotional reactions serve adaptive purposes (Ekman, 1992, 1999; Ekman, Friesman, &

Ellsworth, 1982; Izard, 1971, 2007; James, 1884; Panksepp, 1982; Plutchik, 1980), designed to aid in dealing with fundamental life tasks.

One aspect important in some appraisal theorists' eyes is the idea of action readiness, which coincides with emotional experience (but do not necessarily cause them; see Frijda, 2001; Moors, 2013). In his later work, Frijda and Zeelenberg (2001) views action readiness as a motivational state defined by its relational aims (e.g., self-protection, enhancement, hostility, rejection), which fits with the appraisal tendency framework offered by Lerner and Keltner (2000; 2001).

The other aspect important to the theory is that emotions are a function of a pattern of different appraisals, some that are primary (pleasant; unpleasant) and others that are secondary (Frijda, 1986; Frijda, 1987; Frijda et al., 1989; Smith & Ellsworth, 1985; Weiner, 1985). In Smith and Ellsworth's study, for example, participants described various emotion experiences and then provided answers to six orthogonal dimensions, including the pleasantness, anticipated effort, and level of certainty felt in the experience. Analyses indicated that responses from these six dimensions were able to correctly identify the one of fifteen emotions participants experienced 44 percent of the time, at a rate of six times better than chance. Follow-up work by Frijda et al. (1989) found similar patterns of results, demonstrating that cognitive appraisal dimensions (along with action readiness; see above) were able to predict the type of emotions participants had experienced. In all, these findings provide *some* basis for the view that patterns of cognitive appraisal are linked to emotion experience.

It should be noted that there are some slight differences between appraisal and functional views of emotions. Whereas classic functional theorists connote that certain activities in the environment lead to rapid and specific changes in behavior (Ekman, 1972), contemporary

theorists (Lerner & Keltner, 2000, 2001) view that changes in behavior are a byproduct of construing the stimulus in an emotion-specific manner. Indeed, the appraisal-tendency framework (ATF) predicts the activation of specific emotions can trigger dispositional changes to assess future (and oftentimes, unconnected events) in the dimension that triggered the emotion. This can be connected to both state and trait-level variations in these feeling states.

### **THE PRESENT RESEARCH**

The overriding goal of my dissertation was to gain insight into the role of context as it bears on the consequences of emotion on judgment and decision-making. As noted in the introduction, “context” can mean many things, but in my research this term referred to the situational context in which the emotion is activated. Moreover, I was also interested in if this alteration in context would fuel anger in starkly different ways; to either produce greater endorsement of politically conservative *or* liberal policies. As I have discussed, research on this issue helped offer broad insights into some foundational issues as they bear on theories of affect and social judgment, particularly those that fall under the umbrella of “appraisal theories.”

In the following set of three experiments, I randomly assigned participants to one of three conditions. (This design initially included a manipulation designed to influence whether affective experience is phenomenologically experienced as mood or emotion, about which I will say more presently.) One of the conditions was be a baseline control in which affect was not manipulated. The other two conditions were developed to elicit anger, and both had done so in the context of reminding participants of a previous injustice. However, the nature of the injustice had varied, as noted below. In my design, it was critical that the extremity (strength) of the anger in the latter two conditions was nearly the same, in order to avoid confounding context with the extremity of



the affective experience. Careful pilot testing was conducted in order to ensure that this was the case.

One of the anger-eliciting conditions was drawn from previous work on the affective consequences of reminding participants of a past or ongoing terrorist attack. Participants in my study were reminded of a past or ongoing terrorist activity against the United States. This was consistent with previous work in our lab (Eadeh et al., 2017; Lambert et al., 2010). The other anger eliciting condition was an adapted story in which a young child tragically died of cancer, and whose healthcare access had been denied by a health insurance company. The child died in part because of unethical policies by his parents' insurance provider, allowing for one ineffective experimental treatment that would cost the company one-tenth of a more highly effective and life-prolonging drug.

As I will elaborate in more detail in a later section, my design had two classes of dependent variables. The first class of measure, which always came first, had assessed the affective experience of the participant immediately after his/her assigned task (see above). These were completed using standard affective inventories along with content analyses from a written task participants were asked to complete (see ahead). Such measurement was able to be utilized as a manipulation check and provided an important tool for conducting mediation analyses (manipulation → affect → judgment).

The second class of measures had consisted of a series of questions that assessed political attitudes, defined broadly. Here, a wide range of measures was employed, enabling me to assess participants' attitudinal responses towards a host of political attitudes. I will describe the nature of those measures in more detail ahead. For now, however, it is most important to note that this stage of the experiment had assessed two distinct "clusters" of political attitudes for all

participants. One cluster of those attitudinal probes assessed participants' hawkish attitudes, that is, the extent to which they support "aggressive" policies by the United States government. The other cluster probed participants' support of health care.

### **Critical Leverage Offered by Measuring Hawkishness versus Health Care**

The delineation of these two attitudinal clusters—hawkishness versus health care—represented an extremely important part of my dissertation. In the first case, hawkishness was an important aspect of *conservative* attitudes for Americans in the 20<sup>th</sup> and early 21<sup>st</sup> centuries. For example, over 70 percent of Republicans supported sending troops to Syria to fight ISIS (Quinnipiac, 2015). As telling by this data, hawkish attitudes represented an important aspect of what it *means* to be conservative, and people were much more likely to support hawkish policies if they are conservative than if they were not (Hetherington & Weiler, 2009; Izzett, 1971).

The reverse was true of health care. In particular, positive attitudes towards public health care represented one important aspect of *liberal* attitudes in the United States, such that people were much more likely to support such policies if they were liberal than if they were not. Indeed, a recent poll had shown that over 78 percent of democratic-leaning respondents endorsed the Affordable Care Act (Gallup, 2014).

The importance of these measures as it concerned Experiments 2 and 3 is laid out in Figure 1. To begin, this depicts two classes of justice violations, both of which were likely to elicit anger. (As noted above, pilot testing ensured that levels of anger were relatively equivalent across the healthcare and ISIS primes.) Most important for my purposes are the two classes of dependent variables, hawkishness and health care. Importantly, all participants had completed both classes of measures in the latter two experiments.

## Predictions for “Congruent” Matching of Context and Judgment

In two cases—delineated by solid black arrows—there is a general congruence between the context in which the anger is elicited and the judgments made by participants. Here, predictions were fairly straightforward. A domain-specific emotion-arousing event in one domain would produce greater support to rectify issues within this domain. Theorists contending this point believe emotions serve clear functions, prioritizing behavior to meet the functions of the observers’ current social and physical environment (Barrett & Campos, 1987; Ekman, 1992, Johnson-Laird & Oatley, 1992; Lazarus, 1991). Indeed, some theorists even believe basic emotions serve adaptive purposes (Ekman, 1992, 1999; Ekman et al., 1982; Izard, 1971, 2007; James, 1884; Panksepp, 1982; Plutchik, 1980), designed to deal with fundamental life tasks.

More specifically, emotions are seen as being connected to an underlying set of cognitive dimensions (Smith & Ellsworth, 1985), such that certain patterns lead to certain emotion responses. For example, anger is an unpleasant state that contains levels of certainty and control, which have the general capability to promote action readiness (Frijda et al., 1989).

In the case of anger, anger implies the unacceptability of the present circumstances and aims to gain control in “righting” the circumstance. In the case of terrorism, anger is a direct output, stemming from (a) an unpleasant event that (b) was intentional, (c) caused by another person, and (d) carries a belief that such events can be reversed. As suggested by work by Frijda (1986; Frijda & Mesquita, 1994) as well as a related line of work in the appraisal area (Lambert et al., 2010; Experiments 1-3), one might expect to see anger exert a systematic effect on contextually relevant attitudes. In the case of anger elicited by terrorism, previous research suggests anger produced by the attacks would lead to greater support for hawkish policies (Huddy et al., 2007; Lambert et al., 2010; Lerner et al., 2003).

In the case of the anger elicited by the “healthcare threat” scenario, one might expect to see that anger from this event would produce a cascade of support for healthcare policies that might alleviate such circumstances from happening again. Why might this be so, and how does it fit research and theory on appraisal models? First, consider the dimensional approach offered by some appraisal theorists (Smith & Ellsworth, 1985), in that anger was seen as an unpleasant event, that involved a degree of certainty about who the responsible parties were. In my view, the sick child scenario fits these desiderata well, because it includes a harm-inducing agent that caused considerable harm on another person. These points were clearly connected to Frijda’s view on anger (1986), in that anger is aroused by a harm-inducing agent, and one goal of this feeling is to provide retribution, in order to provide corrective behavior. Most interesting in this debate is whether this particular scenario would induce a hypothesized shift to the political left, or would instead be consistent with myriad research on anger and conservatism (Eadeh et al., 2017; Lambert et al., 2010; Lerner et al., 2003).

### **Predictions for “Incongruent” Matching of Context and Judgment**

Far more important are the cases where there was a mismatch between the context and the type of judgment to be made; these are represented by red arrows in Figure 1. This was rather important because existing theory and research offered two very different perspectives in terms of whether the consequences of anger should be context specific or not.

### **Reasons Why Context Should *Not* Matter: Anger as Mood**

In the type of design described here, one might conceptualize anger as a mood state. Typically, moods are seen as something that “lacks a clear referent, may come about gradually, may last for an extended time, and are often of low intensity” (Schwarz & Clore, 2007, p. 386).

Moreover, because moods are not “about” any one thing in particular, their “diffuseness” can sometimes lead to widespread changes in judgment and behavior.

This conceptualization is important because there is a line of research suggesting that the effects of mood on judgment can often be fairly general, where mood primed in one circumstance can carryover into different decision tasks. One foundational study in this domain is the work of Johnson and Tversky (1983). In particular, these researchers examined whether reading anxiety-inducing information about a fellow student’s death (by various circumstances) could inform a different task based on generalized perceptions of risk.

The researchers considered several hypotheses; including (a) mood would have no relationship to risk assessment, (b) mood would affect risk when the previous vignette had this form of death, (c) mood would affect risk in the exact and related forms of death (e.g., death by fire in original vignette vs. electrocution), or (d) mood would affect risk perceptions. Although they strongly considered a context-driven approach (See hypothesis b), they found consistent evidence across several experiments (varying the emotion induced by the experimenters) that mood in one task could lead to a diffuse effect on risk perceptions (Hypothesis D) in a different task.

In other words, participants used their current affective experience to guide their judgments (cf. Schachter & Singer, 1962). Such findings can be seen with respect to happiness (Bodenhausen, Kramer, & Süsser, K, 1994), sadness (Bodenhausen, Sheppard, & Kramer, 1993; Keltner et al., 1993), anxiety (Lambert et al., 2010; Lerner & Keltner, 2001, Experiment 4), and anger (Goldberg et al., 1999; Lerner et al., 1998). These findings supported the assumption that feelings of affect can guide decision-making processes in virtually unconnected domains.

As one telling demonstration with respect to anger, consider experiment 4 of Lambert et al. (2010). In this particular experiment, participants were randomly assigned to condition in which they were (or were not) asked to think of a time in their life they were treated unfairly. Importantly, most participants in this task wrote about personally relevant events (e.g., being treated unfairly at work) that were not directly related to their political beliefs. Then, all participants completed a task in which they read about a political candidate backing a pro-hawk military view, something unconnected to the original anger-inducing event. Analyses from this study indicated anger from a personally relevant (and unconnected) scenario altered the degree of support for this pro-military politician. These analyses indicate that participants used their anger from a previous transgression in a *functionally equivalent* manner to those participants from previous experiments being reminded of terrorism (see Experiments 1-3).

A different set of studies by Lerner and colleagues (Lerner et al., 1998; Goldberg et al., 1999) also show similar effects, such that anger in one context promoted punitive behavior in a completely different context. In the Goldberg et al. (1999) study, participants watched an anger-inducing video from a movie that was pilot tested to arouse anger. Some participants were told the norm violator from the film did not go punished for his/her misdeed. Then, participants completed an unrelated task where they read short vignettes about different fictitious characters engaging in ethically questionable behavior. For instance, one vignette centered on a used car salesman selling a customer a vehicle that had defects.

Analyses indicated that in the no-punishment condition, anger stemming from the unconnected task correlated with an increased desire to punish the unethical characters from the vignette. These findings are important because they undercut the view that mood cannot carryover into other judgment tasks. As seen here, anger triggered in one context certainly acted

in a functionally equivalent manner to another context, even though there was no direct link between the two contexts.

### **Reasons Why Context *Should* Matter: Anger as an Emotion**

Alternatively, one might conceptualize anger from either the terrorists or healthcare insurers as an emotion that is *directed* at the norm violator. In other words, one is probably not angry in a diffuse manner, but are likely to be angry with a person or organization that intended harm. (Frijda, 1986; 1988; Smith & Ellsworth, 1985).

Although there was no study I knew of that had examined this particular point, research and theory on emotion experience (vs. mood) might imply that context *should* matter. This is because emotions are often seen as being “elicited *by* something, are reactions *to* something, and are generally *about* something” (Ekkekakis, 2013, p. 322; but see also Batson, Shaw, & Oleson, 1992; Beedie, Terry, & Lane, 2005; Russell, 2003; Russell & Barrett, 1999). By this line of reasoning, emotions should, in fact, be *constrained* by the context in which the emotion is elicited. If X does something to arouse an emotional state, then emotions should facilitate a reaction to X, but not necessarily Y.

This postulate would specify that the *specific* norm violator that triggered the affect would be the person or organization that would receive the anger-directed “punishment.” In my own experiment, this meant anger produced in one context would manifest in context-specific retaliation. If the terrorists had angered you, anger would be used to inflict harm towards them. Alternatively, if the healthcare insurance industry had angered you, anger would be used to inflict harm onto them.

This follows Frijda’s view on the laws of emotion (1988), in that once the “no more action needed” signal has sounded, the signaling system can be switched off; there is no further

need for it (p. 354). What this meant in my own paradigm was that anger was potentially directed at the norm violator. Once such “remediation” has taken place, the use of anger to guide other judgments and decisions should be alleviated. Hence, if one was angry because of terrorism, his or her desire to support hawkish attitudes would close the affective link between anger and other unconnected social attitudes, like healthcare.

### **Why Both Sides May be Right**

As differentiated as these views may be, there is the possibility that both sides of the debate are correct. Indeed, the question of whether affective states can lead to broad or narrow decision-making processes might be contingent on whether the source of the emotional state is made highly salient. This is not to say that there are always differences between mood-like and emotion-like processes. In fact, I believe emotion and mood-like instructional sets will not at all differ when the judgment type is made within the context that the anger was elicited. In other words, being in an angry mood from terrorism or being primed about the nature of your anger from this task are both going to result in support for military hawkishness. In these circumstances, “mood” and “emotion” processes will be functionally equivalent, given that both are likely to produce the same outcome.

The critical break point between emotion and mood-like attributions is if the source of the anger is made highly salient. When the source of the anger is highly salient, I believe that any consequences will be obtained within the context that the affective state was aroused. This would result in a narrow-band set of findings, where high source salience leads to relatively narrow effects of affect on judgment. For participants angry from the sick child scenario and alerted to the source of their anger, they will use their emotion to inform their views on healthcare. For participants angry from the terrorism prime and made aware of the source, their anger will guide



their support for hawkish policies. Together, these findings support the view that contextual circumstances matter when examining the role of affect and judgment.

However, what if the source is not made salient? In these cases, I believe the role of affective experience in judgment and decision-making will be relatively broad, encompassing differences in attitudes from within the original source of induction and outside of the source as well. In other words, when situations are mood-like, the link between affect and behavior, much like the affective experience itself, is going to be relatively diffuse and broadband. In this experiment, this would yield anger triggering greater support for healthcare policy and greater support for military hawkishness, given that both are framed in an assertive tone (Tagar, Federico, & Halperin, 2011), regardless of the context that originally elicited the anger. If the informational value of the source is not put into question (cf. Dutton & Aron, 1974), people will utilize their feeling states as an informational source to nearby stimuli. However, if the feeling state is attributed to specific stimuli, the effects of the feeling state on unrelated behavior is likely to be severed (Keltner, Locke, & Audrain, 1993).

Thus, my argument is the salience of the source of the feelings is likely to play a pivotal role in whether participants engage in broad or narrow-band judgments. If the source salience is high, then it's likely to see anger channeled directly to the source. However, if salience is relatively lower, then the consequences of anger on judgment are going to be broad and diffuse. In both cases, however, I predict a functional equivalence in mood and emotion processes, such that domain-specific anger will drive support for domain-specific judgments. This will take place regardless of whether the feeling state is made highly salient or not.

## **Manipulations that Could Shift Anger into Having “Mood-Like” vs. “Emotion-Like” Qualities**

One reliable way to shift participants into experiencing mood-like and emotion-like attributions is through attribution processes. Studies of attribution simply remind or refer participants (via instructional set) to the actual source of their feeling state, which helps diminish the role of affect in seemingly unconnected judgments (cf. Schachter & Singer, 1962). To begin, we follow the classic work of Schwarz and Clore (1983) who find alerting participants to the source of their feelings (i.e., weather) reduced the impact of the feeling state on unconnected judgments (i.e., life satisfaction) (see also Clore, Schwarz, & Conway, 1994). These considerations were also mentioned quite extensively as part of Gohm and Clore’s (2000) hypothesized model on how affect informs judgment (see Gohm & Clore, 2000; Figure 1). As seen throughout the literature, the effects of attributions on judgments as a function of current mood are consistently eliminated once the source of the feeling state is salient (Clore, Gasper, & Garvin, 2001; Schwarz, Servay, & Kumpf, 1985; Schwarz, Strack, Kommer, & Wagner, 1987; Strack, Schwarz, & Gschneidinger, 1985).

I plan to elicit an emotion-like attribution by use of instructional set immediately prior to the political judgment questions. Specifically, I plan to use a similar manipulation to evoke attributions of feelings by subtly reminding participants about the norm violator from the particular anger induction. Participants placed in the control condition would be asked to move onto the next part of the experiment and would be framed in such a manner that makes it seem as the anger condition and mood measures were a different part of the experiment.

## Predictions

As mentioned above, the salience of the anger-evoking agent could play an important role in determining whether affective experience plays a broad or narrow role in driving judgment and behavior. When the specific source of anger is highly salient, the effects of anger on attitudes will be narrow-band, specific to the context in which the anger is elicited. For the terrorism prime, I anticipated the anger elicited from this specific prime would produce much greater support for military hawkishness. Conversely, anger manipulated from the sick child scenario would result in greater support for healthcare access. Importantly, I anticipated no connection between the anger-evoking context and unconnected political views, when the norm violator is made salient. In other words, once the source of the anger is recognized in the sick child task (health insurance companies), it is unlikely that anger would produce greater support for military hawkishness. These predictions follow the context-specified nature of emotion experience, proposed by previous research (Barrett, 2013; 2014; Frijda, 1988; Schwarz & Clore, 1983; Wilson-Mendenhall et al., 2011).

However, when the source of anger is *not* made explicitly salient, anger would lead to greater support within and outside of the context that the source was activated. In these circumstances, the anger elicited by either anger manipulation would lead to significantly more positive reactions towards both healthcare and military hawkishness. More concretely, low source salience would imply that anger as a result of terrorism has the capability to produce support for both improvements to healthcare *and* support for military hawkishness. These would follow the general patterns of findings by previous research (Lambert et al., 2010; Schwarz & Clore, 1983; Tagar et al., 2011).

## **An Important Caveat Regarding the “Salience” Predictions**

The preceding line of reasoning was based on the premise that “context would matter” *only* when the source of the affect was made salient through experimental manipulation. In other words, the preceding discussion assumed that (a) I would find evidence for context independence in baseline condition (i.e., absent any induction of source salience) but that (b) I would find evidence for context dependence when salience was experimentally manipulated to be high.

However, there was a potential outcome of my experiments that made the salience manipulation moot. In particular, suppose that I found evidence for context dependence, *even in the absence of any experimental manipulation designed to make the source salient*. If that type of effect occurred, this would remove the logical necessity of the salience manipulation in the first place. In other words, this effect would represent a strong confirmation of the context dependence model, without having to provide the extra “boost” in salience.

As it turns out, that is exactly what happened. In particular, I found different types of threat contexts (i.e., terrorism vs. health care) produced sharply divergent consequences for attitudes, even in baseline conditions. This did not, in any way, compromise the integrity of my design or its implications. Rather, it simply meant that I found strong support for the dependence perspective, without having to resort to an additional manipulation to make the source more salient. This aspect of my results became apparent after some initial piloting of Experiment 2. Thus the ultimate design of Experiment 2 as well as Experiment 3—neither of which contained any salience manipulations at all—ended up strongly supporting the context dependence view.

## **Summary of Design and Procedure**

Experiment 1 was a foundational experiment, designed to examine the role of threats from terrorism (vs. control condition). Participants in this experiment completed three sets of

dependent measures, first completing a writing task (which was content analyzed using the Linguistic Inquiry and Word Count Program; see Pennebaker, Boyd, Jordan, & Blackburn, 2015), a standard mood inventory, and then questions pertaining to their political attitudes. With respect to the political attitude items, participants in this experiment had completed two sets of political attitudes: one pertaining to social conservatism, and the other related to hawkish military attitudes. Afterwards, all participants had completed demographic and individual difference variables.

Experiment 2 was logistically similar, but with two changes. First, the nature of the threatening task had differed, as participants in this experiment read about the healthcare threat (as compared to the terrorist threat priming manipulation in Experiment 1). In addition, participants had evaluated healthcare attitudes as part of the political attitudes index. Following the political attitudes index, all participants answered demographic and individual difference variables.

Finally, the third experiment consisted of a between-subjects design with three conditions: terrorist threat, healthcare threat, or control. Following condition assignment, participants completed the writing task and a standard mood inventory, followed by a randomized set of political attitudes. In this experiment, participants completed attitudes items pertaining to hawkish military attitudes, healthcare attitudes, and attitudes toward social conservatism (for all political attitudes items, see Appendix A). Finally, all participants in this third experiment completed demographic and individual difference variables.

### **Experiment 1**

The central goal of my dissertation was to investigate whether the attitudinal consequences of threat were context-dependent (Barrett, 2013; 2014; Eadeh et al., 2017; Frijda,

1986; 1988; Smith & Ellsworth, 1985) or context-independent (cf. Johnson & Tversky, 1983; Lerner & Keltner, 2000; Schwarz & Clore, 1983). The purpose of the first experiment was thus foundational, designed to show that consequences from threat are channeled through changes to affective experience. This approach was consistent with an appraisal tendency framework, suggesting different emotions were associated with a relatively distinct pattern of motivational responding (Keltner et al., 1993; Lambert et al., 2010; Lerner & Keltner, 2000; 2001)

These requirements were met with an experimental manipulation designed to trigger anger, an action-oriented emotion often associated with fixing a past injustice (Frijda, 1986; Goldberg et al., 1999; Lerner et al., 1998; Smith & Ellsworth, 1985). More specifically, the threat of terrorism had been shown to shape support for hawkish conservative attitudes, as channeled through intermediary changes to anger (cf. Eadeh et al., 2017; Lambert et al., 2010). Of course, the threat of terrorism often elicits a variety of negative emotions, including feelings of fear and sadness. However, only anger boosts appraisals of aggressive militaristic policy, or for politicians that hold such views. These hawkish views are *generally* considered to be central to conservative political ideology (Hetherington & Weiler, 2009; Izzett, 1971).

The present study provided a useful contrast for the subsequent studies to follow, in that anger in the context of terrorism would boost support for hawkish conservative ideology. My plan was to use these findings, as a point of departure, demonstrating anger in this context would boost support for various tenets of conservative ideology. This initial question helped clarify if other anger-primers would demonstrate similar affect-induced shifts to the political right.

In the first experiment, participants were randomly assigned to read a newspaper article about the threat of the Islamic State (also known as ISIS/ISIL), or an affectively neutral control condition. Afterwards, all participants were asked to write about their assigned article, followed

by a standard mood inventory. Finally, participants completed a multi-item measure of political attitudes, including, items related to hawkish military attitudes. I hypothesized that anger from terrorist threat would induce greater support for conservative attitudes, but such effects would be central to military attitudes. The alternative hypothesis was that affect-driven changes in political conservatism are broad, such that affect (but more specifically, anger) induces support for conservative ideology, both within and outside of aggressive military attitudes.

### **Considerations of Multicollinearity**

When different forms of negative affect are highly correlated with one another, this represents an important consideration for multiple regression, and the potential for multicollinearity in particular. Consequently, in all of the analyses to be reported in this dissertation, I always conducted a preliminary set of analyses to test for the possible presence of multicollinearity across predictor variables (i.e., fear, anger, sadness). I utilized variance inflation factors in assessing multicollinearity, a statistic that quantifies the degree of multicollinearity in regression analyses. These scores can range from 1 to infinity, with higher numbers indicating a greater degree of multicollinearity between predictor variables.

As for the threshold variance inflation factor (VIF) at which one would conclude that there is multicollinearity, opinions vary widely. Some scholars (e.g., Allison, 2012) set this threshold at about 2.5 (a relatively “strict” criterion), others have proposed VIF cut-offs at around 5.0 (Menard, 1995) and some have proposed a fairly lenient threshold of 10.0 (Marquardt, 1970; Neter, Wasserman, & Kutner, 1989). In the present research, I selected a relatively conservative VIF threshold of 5.0, with the understanding that any given “solution” (no matter what threshold is chosen) is not likely to please all statisticians.

In the present paradigm, tests for multicollinearity were most sensibly conducted in

pairwise fashion. For example, suppose (a) the correlation between anger and sadness tended to be stronger than the correlation between anger and fear, and (c) fear and sadness were only moderately correlated with one another. In this scenario, one would want to conduct a series of pairwise analyses to determine where, exactly, the multicollinearity had arisen.

Using the pairwise approach noted above, I conducted a thorough search for multicollinearity, but none of these analyses came close to reaching the chosen VIF threshold of 5.0. This was true for analyses involving the simultaneous entry of (a) anger (2.93) and sadness (2.82), (b) anger (2.16) and fear (1.85), and (c) fear (2.10) and sadness (2.36). Simultaneous entry of all three variables also did not reach threshold, and this was true for anger (3.07), sadness (3.34), and fear (2.19).

## **Method**

### **Participants and Design**

Participants were 151 adults from the United States (48 Male, 102 Female, 1 Other) who were recruited from Amazon.com's Mechanical Turk; each was paid a small fee in compensation. The design included a between-subjects manipulation of priming type (ISIS threat vs. control). After completing a writing task and standard mood inventory, all participants evaluated a battery of political attitudes items. In addition, gender did not moderate any of the effects presented in this experiment. Therefore, all subsequent analyses collapsed over this factor

**ISIS prime:** Participants in this condition were asked to read an adapted newspaper article about some of the basic facts surrounding recent ISIS attacks. In particular, participants were told that "ISIS is a terrorist organization which has claimed responsibility for the execution of a number of individuals, including but not limited to American citizens." The full newspaper article is presented in Appendix B. In order to assess their spontaneous reactions to the article



that they had read, participants were presented with the following prompt immediately after presentation of the article: “In the space provided, we would like you to list whatever thoughts and feelings you have about the article you just read. Five or six sentences are sufficient.”

Participants were free to write anything they wished; the only constraint was that answers needed to be between 200 and 5000 characters.

**Control prime:** Participants assigned to the neutral control condition read a fact-based article about food allergies. Participants were then asked to complete the same writing prompt found in the ISIS condition. Length constraints on such responses were identical to the ISIS prime. See Appendix B for this newspaper article.

### **Assessment of Mood**

The mood assessment task involved the randomized presentation of a set of 35 mood adjectives, with participants indicating how they felt at that moment along a scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). The construction of the particular mood indices in my study was grounded in *a priori* theoretical considerations as they related to my working model, the findings reported by Lambert et al. (2010), as well as more general axioms of emotional appraisal theory (cf. Lerner & Keltner, 2000). My primary interest was in anger, and to this end I formed a composite index of this state based on an average of *angry*, *mad*, *irate*, and *furious* (alpha = 0.93). To demonstrate that the findings were central to feelings of anger (and not other forms of negative emotion) I also formed indices for sadness (based on the average of *sad*, *unhappy*, and *dejected*, alpha = 0.81), and fear (based on the average of *afraid*, *scared*, and *fearful*; alpha = 0.95). As seen in Table 1, these various indices were highly correlated.<sup>2</sup>

### **Linguistic Coding of the Free-Write Passages**

Use of the LIWC program involves submitting a given body of text for semantic analysis,

which provides a tabulation of the relative frequency with which participants are generating words falling within various predesignated “linguistic libraries” (see Pennebaker, Booth, & Francis, 2007; Pennebaker, Boyd, Jordan, & Blackburn, 2015). Once this frequency count is generated, one can potentially conduct further analyses to investigate whether these frequencies differ as a function of the condition to which participants were assigned.

The LIWC program comes “pre-packaged” with a large number ( $n = 125$ ) of semantic libraries. Many of these pertain to style (function) words, such as pronouns (her, him), adverbs (instead, often), or conjunctions (also, because). Other categories are more content-based, including categories such as family (father, mother), body-related words (arm, shoulder), or sexuality (naked, sexy). In principle, an investigator could analyze a given a body of text with respect to all 125 categories. However, the sheer number and breadth of these categories is far too large to make such an approach viable. Instead, investigators using the LIWC program typically focus on those categories that, on a priori grounds, are theoretically relevant to the research program at hand. Relatedly, the LIWC program also allows researchers to construct their own custom linguistic categories, to tailor them to the particular needs of the research paradigm.

In my own case, my goal was to construct affect indices consistent with how mood was assessed, providing a reasonable match to the types of affective experiences captured by our mood measures, noted above. In particular, I constructed three separate linguistic library of terms related to feelings of anger, fear/anxiety, and sadness. The specific terms used in these indices are listed in Appendix C. Findings pertaining to the LIWC variables can be found in the supplemental analyses following primary analyses for each experiment.

## **Political Attitudes**

Following the completion of the mood inventory, participants expressed their attitudes towards a series of political statements, presented in a different randomized order for each participant (see Appendix A for a complete listing of statements). All items were completed on a seven point Likert Scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).<sup>3</sup>

**Formation of hawkish composite.** As noted in the general introduction of my dissertation, I had an *a priori* interest in examining the role of hawkish military attitudes, given that support for hawkish attitudes was elevated from terrorism-fueled anger (Lambert et al., 2010; Eadeh et al., 2017). Therefore, a primary goal in this first experiment was to include a conceptually meaningful composite of hawkish attitudes. To accomplish this goal, participants answered 12 items related to hawkish political attitudes. This array of items (presented in Appendix A) were designed to tap into participants' attitudes about strengthening the military, a preference for military aggression (vs. diplomacy), and increased funding for this aspect of government. Principal components analysis on all 12 items (using an unrotated solution) yielded one primary component (Eigenvalue = 7.95, variance explained = 66.25%), which was saved using SPSS' regression function. These loadings are presented in Appendix D.

**Formation of social conservatism composite.** As a contrast to the hawkishness aspect of conservative ideology, I also included a series of 20 items related to general social conservatism. Items pertaining to this latter index included views on the role of religion in government, attitudes towards gun control, and anti-minority attitudes, along with liberal political attitudes (*I am happy that same-sex marriage is now legalized; Abortion should be legal in all circumstances*) To this end, principal components analyses (again, with an unrotated solution) were conducted on the social conservatism attitudes, using SPSS' regression save

function. Analyses yielded one primary component for social conservatism (Eigenvalue = 8.12, variance explained = 40.58 %). Component loadings are presented in Appendix E. Moreover, the hawkish and social conservatism components were highly correlated ( $r = 0.69, p < .001$ ), such that higher scores on one component were associated with higher scores on the other.

## Results

### Effects of Terrorist Prime on Mood

As predicted, participants in the ISIS condition expressed greater levels of anger ( $M = 2.34, SD = 1.16$ ), compared to those assigned to the control condition ( $M = 1.23, SD = 0.42$ ),  $F(1, 149) = 73.80, p < .001$ , Cohen's  $d = 1.27$ . Significant differences were also found for fear between those assigned to the ISIS ( $M = 2.10, SD = 1.13$ ) and control condition ( $M = 1.25, SD = 0.57$ ),  $F(1, 149) = 41.40, p < .001$ , Cohen's  $d = 0.95$ . Finally, participants in the ISIS condition ( $M = 2.21, SD = 0.93$ ) expressed greater levels of sadness, compared to those assigned to the control condition ( $M = 1.29, SD = 0.48$ ),  $F(1, 149) = 65.18, p < .001$ , Cohen's  $d = 1.24$ .

### Effects of Terrorist Prime on Attitudes

I next considered the potential impact of the ISIS prime on attitudes. As for the hawkish attitudes index, there were no significant differences in support between the ISIS condition ( $M = 0.07, SD = 1.03$ ) and control condition ( $M = -0.07, SD = 0.97$ ),  $F(1, 149) = 0.67, p = 0.41$ , Cohen's  $d = 0.14$ . Similarly, the ISIS prime had no impact on the social conservatism index, as seen by the similar means across the ISIS ( $M = 0.11, SD = 1.03$ ) versus control conditions ( $M = -0.11, SD = 0.97$ ),  $F(1, 149) = 1.79, p = 0.18$ , Cohen's  $d = 0.22$ .

### Partial Correlation Analyses

As a precursor to the mediational analyses to be reported ahead, it is useful to report a series of initial correlations involving the relationship between the various mood indices and the

two attitude indices. (In all of these analyses, I always control for priming condition.) These findings are presented in Table 2. Consider the top row of this panel, which presents the relationships involving all three mood indices. As seen in this portion of the table, anger (and to a lesser extent fear) was associated with greater support for hawkish attitudes as well as social conservatism.

In line with the theoretical approach and statistical analyses taken within the emotional appraisal area (cf. Huddy & Feldman, 2011), it was useful to next consider the unique contributions of these different mood states. In this regard, I was especially interested in the distinct effects of anger on both attitudes components, while controlling for sadness and fear. As seen in the middle pane of Table 2, the effects of anger on both attitude indices remained significant. I next performed a complementary analysis, examining the distinct role of fear and sadness, after controlling for their shared variance with anger. As seen in the bottom pane of Table 2, the effects for fear completely disappeared. In the case of sadness, these analyses revealed an opposite trend, such that higher levels of sadness were associated with less support for each of the two attitude indices.

In the previous analyses, I examined the relationship between mood and each of the two attitude indices, without taking into account the shared variance between the two different measures of attitudes. For the sake of completeness, I conducted two additional analyses involving anger. One of these examined the relationship between anger and hawkishness, controlling for conservatism (along with fear and sadness). This analysis yielded a null effect ( $r = 0.13, p = 0.11$ ). I performed complementary analysis, examining the effects of anger on the social conservatism, after controlling for sadness, fear, and the hawkish attitudes index. These analyses also yielded a null effect ( $r = 0.12, p = 0.14$ ). I consider the theoretical implication of

these additional analyses in the discussion section, ahead.

### **Mediation Analyses**

In light of my previous and ongoing work in this area (Eadeh et al 2017; see also Lambert et al. 2010), my primary interest was in testing for anger-based mediation on the hawkishness index. To formally examine the role of affect in shaping attitudes, I performed mediation analysis using model 4 of Hayes' (2013) Process macro. In this case, the experimental condition served as the independent variable (X), anger, fear, and sadness served as the mediating variables (M1-M3), and hawkish attitudes served as the outcome measure (Y). These findings, presented graphically in Figure 2, show that the threat of terrorism induced anger, fear, and sadness. From these, *only* anger and sadness were associated with hawkish political attitudes. Consistent with previous research (Eadeh et al., 2017; Lambert et al., 2010), anger was positively correlated with hawkish attitudes, whereas sadness was inversely correlated with this measure. These findings are consistent with previous research on the affective consequences of terrorist-primed threat.

Given the pattern of results shown in Table 2, one would also expect a similar pattern of mediation to occur with social conservatism. In particular, when I repeated the preceding set of analyses with social conservatism as the criterion variable, this analysis also revealed a significant evidence for anger based mediation, indirect effect  $b = 0.55$ ,  $se = 0.19$  95% CI (0.25/0.96) (I do not report the graph corresponding to that analysis given its redundancy with the implications of Figure 2).

### **Supplemental Analyses involving LIWC**

I examined language used in the passage and created custom dictionaries for fear/anxiety, anger, and sadness-related words. In particular, I examined the correlation between the LIWC and the attitudes indices within the experimental condition (i.e., terrorist threat). Because these

data contained a significant level of positive skewness (with some skews greater than 2.0), I utilized a series of different skew reduction techniques to reduce skew, including the natural log, square root, and cube root (see Decoster, 2001). Since the natural log transformation reduced the most skew, I performed a series of correlation analyses with this statistic. First, I examined the effects of each of these indices on political attitudes. Next, I examined the partial correlation effects for anger, controlling for fear, and sadness. Then, I conducted an additional partial correlation analysis, examining the roles of fear and sadness, controlling for anger. These results are presented in Table 3.

### **Discussion**

The main purpose of the first experiment was to provide a foundational test for whether changes in affective experience from a threatening context could produce shifts in attitudes. This approach follows a long line of research on this topic, suggesting changes to affect experience carry consequences for judgment and behavior (Forgas, 1995; Lerner & Keltner, 2000; 2001; Schwarz, 2012). The first experiment examined this question using the threat from terrorism, as previous research shows this threat produces anger-fueled boosts in hawkish attitudes (cf. Eadeh et al., 2017; Lambert et al., 2010). Analyses replicated these findings, and demonstrated that anger in the context of terrorist threat induced support for hawkish policies. My analyses also revealed a similar pattern of mediation for social conservatism. Overall, this fits one perspective in the emotion literature, implying that the rise of anger is a motivational approach to deal with an actual (or perceived) injustice (cf. Darley & Pittman, 2003; Frijda, 1988).

These findings provided a foundational point of departure for the following two experiments, as the anger-fueled effects from terrorism induced greater support for conservative ideology. If the healthcare threat demonstrated similar right-leaning shifts through changes to

anger, these findings would provide strong leverage for the context-independence hypothesis (cf. Johnson & Tversky, 1983; Lambert et al., 2010, Study 4; Schwarz & Clore, 1983; 2007). If this particular threatening context induced anger-driven shifts in the opposite direction, such findings would corroborate the context-dependence approach considered by others (Barrett, 2013; 2014; Eadeh et al., 2017; Frijda, 1986; 1988; Smith & Ellsworth, 1985).

## **Experiment 2**

The purpose of Experiment 2 was to investigate whether the induction of anger in a completely different context would—or would not—produce similar consequences for political attitudes. As mentioned earlier in the introduction, some theoretical views would seem to imply that context does *not* matter (Goldberg et al., 1999; Johnson & Tversky, 1983; Lambert et al., 2010, Study 4; Lerner et al., 1998; Lerner & Keltner, 2000; 2001) whereas others imply that context should matter (Barrett, 2013; 2014; Eadeh et al., 2017; Frijda, 1986; Smith & Ellsworth, 1985). In other words, would the activation of anger stemming from the healthcare threat case lead to aggressive military attitudes? Or instead, might this type of justice violation lead to greater support for liberal political policies, as they relate to healthcare?

The second experiment provided an important test of the context-independence hypothesis. As seen above, the use of this healthcare threat manipulation provided critical leverage for understanding whether the *context* in which affect is activated played a critical role in its effects on shaping attitudes (Barrett, 2013; 2014; Frijda, 1986; 1988; Johnson & Tversky, 1983; Lerner & Keltner, 2000; 2001; Smith & Ellsworth, 1985; Wilson-Mendenhall et al., 2011). Because healthcare and military attitudes are often central to liberal and conservative ideology (Gallup, 2014; Hetherington & Weiler, 2009; Izzett, 1971), it was vital to test whether a justice



violation from a context related to liberal ideology would differ from an emotion-inducing context related to conservative ideology (e.g., terrorism).

Participants in Experiment 2 were randomly assigned to a threat condition, or a neutral control condition. In this particular experiment, participants in the experimental condition read about a case where a young child was denied life-prolonging medical treatment, whereas participants in the control condition read the food allergies article from Experiment 1. After completing the assigned task in each respective condition, all participants completed the same mood inventory employed in Experiment 1. Afterwards, participants evaluated a series of political attitudes, presented in a different randomized order for each participant.

This political attitudes block included the same items from Experiment 1. In addition, however, I had also included a battery of items related to healthcare attitudes. These intuitively generated items were not directly related to the specific event, and included general healthcare attitudes. The purpose of this inclusion was to provide for an attitudinally relevant index of attitudes, relevant to the particular threat induced in this experiment. Whereas the first experiment included a measure of hawkish attitudes, the second experiment included a measure of attitudes related to healthcare. The inclusion of the healthcare attitudes block provided critical leverage on the theoretical question of context independence. If context did not matter, then anger would presumably induce support for hawkish attitudes. If context did matter, then anger would induce support for healthcare-related attitudes.

### **Considerations of Multicollinearity**

It is worth emphasizing that the original source of anger in this study—the reason *why* anger was being activated—was *much* different compared to Experiment 1. In particular, when participants in Experiment 2 were induced to feel angry, this was being triggered by a story

about the death of a child due to inadequate health insurance. This kind of context is very different from being made to feel angry through the actions of a terrorist group. For this reason, the nature of the relationship between anger and the other mood states could, in fact, be somewhat different in this study compared to Experiment 1.

Indeed, this is what I found. Most obvious is the fact that the relationship between anger and sadness was *much* stronger in this study, approaching .90 (see Table 4, ahead). Note that this reflects approximately *80% shared variance*, which is substantially higher than the shared variance in Experiment 1 (in the mid-30s). A moment's reflection suggests why this might be so: In this study, the primary reaction of participants to this story was likely to be sadness/grief (e.g., how could we let a young child die?) and this type of reaction was correlated with anger towards insurance companies. Indeed, given these considerations, and in light of the extreme statistical overlap between anger and sadness, it seemed reasonable to suggest that anger and sadness were psychologically speaking, virtually and statistically redundant.

Bolstering this line of reasoning, VIFs were clearly above threshold when anger and sadness were entered into the regression model (6.91 vs. 6.64, respectively). However, when anger and fear were entered into the model, neither showed significant levels of variance inflation (VIFs = 3.14 vs. 1.91). This was also true when sadness and fear were entered into the model, VIF scores of 3.79 versus 2.40, respectively. This aspect of my results does not pose a particularly problematic barrier for the test of issues of main theoretical importance. In particular, it simply meant that, in the context of regression analyses *for this particular study*, it was not meaningful to examine the unique variance of anger controlling for sadness, and vice versa. As I shall show, however, the pattern of results provided strong insight and leverage into the issues of primary concern here.

## Method

### Participants and Design

303 adults from the United States (91 Male, 207 Female, 1 Other, 4 did not answer) were recruited from Amazon.com's Mechanical Turk; each was paid a small fee in compensation. The design included a between-subjects manipulation of priming type (healthcare threat vs. control). After completing a standard mood inventory, all participants evaluated a series of political statements, designed to gauge their views on a number of political attitudes. In addition, gender did not moderate any of the effects presented in this experiment. Therefore, all subsequent analyses collapsed over this factor

**Healthcare threat:** Participants in this condition read about the story of Kyler Van Nocker, a five-year-old child stricken with an advanced stage of cancer. The story detailed Kyler's parents' desire to receive an effective (but not-yet FDA approved) and expensive experimental treatment with promising results. Even though his parents had health insurance, their health insurer denied their coverage given that the treatment was experimental. Yet, the insurer approved a *different* experimental treatment that cost one-tenth the price, thereby negating the argument that the denial was due to the experimental nature of the treatment. The full newspaper article is presented in Appendix B. In order to assess their spontaneous reactions to the article that they had read, participants were presented with the following prompt immediately after presentation of the article: "In the space provided, we would like you to list whatever thoughts and feelings you have about the article you just read. Five or six sentences are sufficient." Participants were free to write anything they wished; the only constraint was that answers needed to be between 200 and 5000 characters.

**Control prime:** The control group was identical to Experiment 1, and read about the scientific

distinction between food allergies and food intolerances. Length restrictions on the writing task were identical to that of the healthcare threat condition.

### **Assessment of Mood and LIWC**

The general procedure and composite for the mood and LIWC indices were identical to Experiment 1. Composites were formed for anger, fear, and sadness, all of which displayed high levels of internal consistency (all alphas > 0.87), and were highly correlated with one another (see Table 4).

### **Political Attitudes**

Following the completion of the mood inventory, participants expressed their attitudes towards a series of 49 political statements, presented in a different randomized order for each participant (see Appendix A for a complete listing). All items were completed on a seven-point likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).<sup>4</sup>

**Formation of healthcare composite.** As mentioned in the introduction, a primary goal was to include a conceptually meaningful composite of healthcare attitudes. To accomplish this goal, 18 items related to healthcare attitudes were included in the political attitudes block. This broad array of healthcare attitudes (presented in Appendix A) tapped into participants' attitudes about access to healthcare, increased coverage for low-income individuals, support for increased regulation, and the role that health insurance companies have in paying for life-saving care. The formation of this index was completed through principal components analysis of all 18 items. This yielded one primary component (eigenvalue = 7.05, variance explained = 39.19%, which was saved using SPSS' regression function. Please see Appendix F for component loadings.

**Formation of hawkishness composite.** Consistent with the first experiment, I was also interested in forming hawkish political attitudes. Therefore, I included the same twelve items

related to hawkish military attitudes from Experiment 1. The formation of this index was completed through the use of principal components analysis, with no rotation. This approach yielded one primary component (eigenvalue = 7.00, variance explained = 58.30 %) and was saved using SPSS' regression function.

**Formation of social conservatism composite.** Also consistent with the first experiment was the inclusion of a series of political attitudes designed to tap into social conservatism. Therefore, I used the same twenty-item index presented in the first experiment. From these items, I performed principal components analysis, which yielded one primary component (eigenvalue = 8.20, variance explained = 40.98 %).

### **Initial Correlation Analyses**

Prior to conducting formal analyses, I examined the correlations between healthcare attitudes and the political attitudes indices from Experiment 1. Indeed, correlation analyses yielded this expected outcome, as the healthcare component was inversely correlated with the hawkish ( $r = -0.46$ ) and social conservatism component ( $r = -0.71$ ), both  $ps < .001$ . In addition, the social conservatism and hawkish components positively correlated with each other ( $r = 0.68$ ,  $p < .001$ ).

## **Results**

### **Effects of Healthcare Threat on Mood**

As predicted, participants in the healthcare threat condition expressed greater levels of negative emotion. This included elevated levels of anger in the healthcare threat condition, ( $M = 3.31$ ,  $SD = 1.27$ ), compared to participants in the control condition ( $M = 1.15$ ,  $SD = 0.43$ ),  $F(1, 301) = 391.81$ ,  $p < .001$ , Cohen's  $d = 2.28$ . Beyond anger, there were significant differences in fear for participants assigned to the healthcare threat condition ( $M = 2.30$ ,  $SD = 1.20$ ), compared

to those assigned to the control ( $M = 1.23$ ,  $SD = 0.62$ ),  $F(1, 301) = 119.94$ ,  $p < .001$ , Cohen's  $d = 1.12$ . Finally, participants in the healthcare threat condition ( $M = 3.13$ ,  $SD = 1.08$ ) experienced higher levels of sadness, compared to those assigned to the control condition ( $M = 1.27$ ,  $SD = 0.52$ ),  $F(1, 301) = 364.64$ ,  $p < .001$ , Cohen's  $d = 2.19$ .

### **Effects of Healthcare Threat on Attitudes**

I next examined whether general attitudes varied as a function of the experimental manipulation (i.e., article assignment) to which participants were assigned. There was a null conditional effect on healthcare attitudes, as participants in the healthcare threat condition ( $M = 0.09$ ,  $SD = 1.00$ ) evaluated healthcare no differently than those assigned to the control condition ( $M = -0.10$ ,  $SD = 1.00$ ),  $F(1, 301) = 2.78$ ,  $p = 0.10$ , Cohen's  $d = 0.19$ . In addition, there were no conditional differences in hawkish attitudes across the healthcare and control condition ( $M_s = -0.02$  vs.  $0.02$ ), nor were there any differences in the social conservatism index ( $M_s = 0.02$  vs.  $-0.02$ ) ( $F_s = 0.49$  and  $0.98$ , both  $ps > 0.25$ ).

### **Partial Correlation Analyses**

To examine whether affect systematically contributed to shifts in political attitudes, I performed partial correlation analyses, controlling for condition assignment. These findings are presented in the top panel of Table 5. Each row contains partial correlations between the various mood indices and political attitudes. These data show that all of the negative mood indices positively correlated with healthcare attitudes. More importantly, *none of the affect indices correlated with either the hawkish or social conservative components*. When contrasted with the findings from Experiment 1, these findings are important because they show that the attitudinal consequences of mood following threat can be quite different, depending on the context in which those emotions were elicited in the first place.

Consistent with the first experiment, my model initially stipulated that anger, but not other negative moods, are central to these affect-driven processes. Nevertheless, my initial model is clearly in need of refinement, as *both* anger and sadness contributed to affect-driven boosts in support for healthcare attitudes. This contrasts with Experiment 1, where the relationship between anger and hawkish attitudes was statistically suppressed by sadness (which demonstrated a strong inverse relationship; see Figure 2).

Nevertheless, to maintain some degree of consistency with Experiment 1, I performed a set of partial correlations between anger and the political attitudes indices, first controlling for condition assignment and fear. (Again, I do not control for sadness, given the multicollinearity issues noted earlier.) As seen in the middle pane of Table 5, the correlation between anger and healthcare attitudes remained significant. I performed a complementary set of analyses, examining the role of fear on the political attitudes indices, this time controlling for anger and condition assignment. As seen in the bottom pane of Table 5, the once-significant effects of fear on healthcare attitudes disappeared. This pattern, taken together, suggest that anger (but not fear) carry consequences in political attitudes.

Beyond the distinct effects of different emotions, I also examined whether the effects of anger on healthcare attitudes were a byproduct of its shared variance with the other political attitudes measures. I first performed a correlation between anger and the healthcare index, controlling for hawkish attitudes, social conservatism, fear, and condition assignment. This effect remained statistically reliable ( $r = 0.20, p < .01$ ). I performed a complementary analysis, examining the effects of anger on conservative attitudes, controlling for healthcare attitudes, fear, and condition assignment. Analyses indicated weak, but significant anger-driven effects for social conservatism ( $r = 0.12, p = 0.04$ ) and a null anger-driven effect for hawkish attitudes ( $r =$

0.10,  $p = 0.08$ ).

### **Mediation Analyses**

To formally examine the role of affect from the threat of healthcare in shaping political attitudes, I performed mediation analysis using model 4 of Hayes' (2013) Process macro. In particular, the experimental condition served as the independent variable (X), anger and fear served as the mediating variables (M1-M2), and healthcare attitudes as the outcome measure (Y). These findings are presented graphically in Figure 3. The finding from this figure demonstrates that changes in anger as a function of being assigned to the healthcare threat condition significantly increased support for healthcare attitudes. I performed additional mediation analyses, this time replacing sadness with fear. These analyses are presented in Figure 4. As seen there, there was no evidence of statistical mediation through either sadness or fear. This was somewhat surprising given the high degree of statistical overlap between anger and sadness.

### **Supplemental Analyses involving LIWC**

I next examined language from the writing prompt using custom dictionaries for fear/anxiety, anger, and sadness-related words. In particular, I examined the correlation between the LIWC and the attitudes indices within the experimental condition (i.e., healthcare threat). Because these data contained a significant level of positive skewness (with some skews greater than 2.0), I applied a series of different skew reduction techniques to reduce skew, including the natural log, square root, and cube root (see Decoster, 2001). Since the natural log transformation reduced the most skew, I performed a series of correlation analyses with this statistic. First, I examined the effects of each of these indices on political attitudes. Next, I examined the partial correlation effects for anger, controlling for fear, and sadness. Then, I conducted an additional



partial correlation analysis, examining the roles of fear and sadness, controlling for anger. These results are presented in Table 6.

### **Discussion**

The results from Experiment 2 are much more consistent with a “context-dependence” perspective on mood and attitudes (Eadeh et al., 2017; Frijda, 1986; 1988; Smith & Ellsworth, 1985), as opposed to a context-independence view (Dasgupta, Desteno, Williams, & Hunsinger, 2009; Goldberg et al., 1999; Johnson & Tversky, 1983; Lerner et al., 1998; cf. Lerner et al., 2015 for an overview). In this study, the threat in question concerned the negative feelings that participants were induced to experience after reading about the needless death of a child due to insurance malfeasance. When participants were assigned to this threat condition (vs. a neutral control condition), the anger (and sadness) from this violation led to greater support for liberal healthcare attitudes. Moreover, anger in this context did *not* lead to more support for hawkish attitudes. Nor was it associated with greater support for social conservatism, a clear point of contrast with what happened in Experiment 1.

### **Experiment 3**

The findings from the first two experiments provide corroborating evidence for the context-dependence hypothesis (Eadeh et al., 2017; Frijda, 1986; 1988; Smith & Ellsworth, 1985). In particular, anger from the threat of terrorism (Experiment 1) increased support for aggressive military attitudes, whereas anger from the healthcare threat (Experiment 2) increased support for liberal healthcare policies. Given that these views are often at opposite ends of the ideological spectrum (cf. Gallup, 2014; Hetherington & Weiler, 2009; Izzett, 1971), such findings are incompatible with the context-independence hypothesis (Goldberg et al., 1999; Johnson & Tversky, 1983; Lerner et al., 1998; Lerner & Keltner, 2000; 2001).

However, the logic of the foregoing conclusion requires making comparisons across two different studies. In order to more conventionally examine the context-dependence hypothesis, one would need to randomly assign participants to one of three conditions: the terrorism prime from Experiment 1, the healthcare threat from Experiment 2, or an affectively neutral control condition (seen in both Experiments 1 and 2). Therefore, Experiment 3 was designed to test the context-independence hypothesis, such that affect generated in different contexts could have radically different consequences for attitudes.

One other change from the earlier experiments is worthy of mention. To improve precision of clarity and measurement, I supplemented the political attitudes items from Experiment 2, with additional items. The inclusion of these items generated minimal differences, compared to using the exact items for PCA analysis in Experiment 2. For these reasons, all primary findings had used the latter index.

### **Considerations of Multicollinearity**

In light of the findings from the first two studies, I expected to see somewhat different issues surrounding multicollinearity, depending on the type of threat presented to participants. Thus, when testing for multicollinearity, I did so in two waves of analyses. One of these just focused on the participants who were assigned to the ISIS versus control condition, paralleling the conditions studied in Experiment 1. Given the results from Experiment 1, I did not expect to see, nor did I find, any evidence of multicollinearity at all. In particular, all pairwise tests of mood indices yielded VIFs all under 3.0, well below the threshold of 5.0 used in my research.

Now consider the participants assigned to the healthcare threat versus control condition. Given the results from Experiment 2, I expected to see evidence of multicollinearity, as a result of the expected overlap between anger and sadness. This is what the data showed. Variance

inflation scores for the pairwise comparison of anger (5.22) and sadness (5.17) were both above the above-mentioned cutoff. In contrast, the VIF scores for anger (2.93) and fear (2.02), and fear (2.41) and sadness (3.46), did not reach the VIF cutoff. Taken collectively, these latter set of findings implied that the findings offered by sadness and anger are largely redundant, at least for this particular type of threat. This simply meant that, as in Experiment 2, it was not meaningful to include sadness as a covariate when examining the effects of anger, and vice versa.

## **Method**

### **Participants and Design**

388 adults from the United States (116 Male, 269 Female, 2 Other, 1 preferred not to answer) were recruited from Amazon.com's Mechanical Turk; each was paid a small fee in compensation. The design included a between-subjects manipulation of priming type (healthcare threat vs. terrorist threat vs. control). After completing a standard mood inventory, all participants evaluated a series of political statements, designed to gauge their views on a number of political attitudes. Finally, gender did not moderate any of the effects presented in this experiment. Therefore, all subsequent analyses collapsed over this factor.<sup>5</sup>

### **Assessment of Mood, LIWC, and Political Attitudes**

The procedure and formation of the mood and LIWC composites were identical to my first two experiments. These included mood composites formed for anger, fear, and sadness, all of which displayed excellent levels of reliability (all alphas > 0.85), and were highly correlated to one another (see Table 7).

The general procedure for the political attitudes task was identical to Experiment 2. However, two items were added pertaining to both military (*Federal funding of our military should be our top priority, even if it means a reduction in funding for other areas; Our military*

*is already receiving enough of our tax dollars; we should be concerned about funding other needs of the American people)* and general conservative attitudes (*We need to protect racial minorities from disproportionate police violence; I would support policy that provides increased funding for education*). Moreover, healthcare attitudes were supplemented with four additional items (*Federal funding of our health care system should be our top priority, even if it means a reduction in funding for other areas; No additional tax dollars should go to providing health care coverage; I would imprison CEOs of health insurance companies that illegally denied coverage to a patient in need; Any health insurance employees who illegally denies healthcare coverage should be immediately fired*).

The formation of these political attitudes indices were consistent with Experiment 2, as principal components analyses were conducted separately on all of the items related to hawkishness, all of the items related to social conservatism, and all of the items related to healthcare attitudes. These analyses yielded one primary component for healthcare attitudes (Eigenvalue = 9.24, Variance Explained = 42.01 %), social conservatism (Eigenvalue = 9.50, Variance Explained = 43.17 %), and hawkish attitudes (Eigenvalue = 8.97, Variance Explained = 64.09 %), which were saved using SPSS' regression function.<sup>6</sup>

Consistent with the second experiment, the healthcare attitudes component was negatively correlated with both the social conservatism ( $r = -0.73$ ) and the hawkish attitudes ( $r = -0.49$ ) components, all  $ps < .001$ . In addition, there was a positive relationship between the social conservatism and hawkish components ( $r = 0.70, p < .001$ ). Taken as a whole, these two findings lend support that healthcare and the conservative attitudes indices were on different ends of the ideological spectrum (Gallup, 2014; Hetherington & Weiler, 2009; Izzett, 1971)

## Results

### Direct Effects of Experimental Manipulations on Mood

As predicted, an Omnibus ANOVA revealed significant differences in anger,  $F(2, 385) = 115.49, p < .001$ , sadness,  $F(2, 385) = 123.08, p < .001$ , and fear,  $F(2, 385) = 73.86, p < .001$ . The means, standard deviations, and effect sizes for each of the respective conditions are presented in Table 8. With respect to anger, participants expressed the greatest level of anger in the healthcare threat condition ( $M = 3.19$ ), followed by the ISIS ( $M = 2.74$ ) and the control condition ( $M = 1.12$ ), each of which were significantly different from each other, all  $ps < 0.05$ . The conditional differences in sadness followed a similar pattern, with participants expressing the greatest degree of sadness in the healthcare threat condition ( $M = 3.04$ ), followed by the ISIS prime ( $M = 2.59$ ), and the control condition ( $M = 1.27$ ), each of which were significantly different from one another. Finally, the differences across conditions for fear were significant, as participants in the terrorist threat condition expressed the greatest level of fear ( $M = 2.48$ ), followed by the healthcare threat ( $M = 2.12$ ) and control conditions ( $M = 1.17$ ).

### Direct Effects of Experimental Manipulation on Political Attitudes

I also examined whether the political attitudes indices varied as a function of the experimental manipulation (i.e., article assignment). There were no differences across conditions in healthcare attitudes,  $F(2, 385) = 1.15, p > 0.25$ , nor were there differences for the hawkish attitudes or the social conservative components ( $F_s = 0.10$  and  $0.44$ , all  $ps > 0.25$ ).

### Partial Correlation Analyses

I next examined whether the effects of mood on political attitudes were contingent on the anger context participants were assigned to. These were completed using two different sets of analyses. In particular, I created dummy codes for participants assigned to the ISIS condition (1)

versus control (0) and an additional variable for those assigned to the collapsed healthcare threat manipulation (1) versus control (0). This allowed me to perform partial correlation analyses for the effects of mood on the liking indices.

### **ISIS versus. Control**

I first examined the correlation between our mood indices and political attitudes, after controlling for the terrorist threat dummy code (1 =terrorism prime, 0 = control) These analyses, presented in Table 9, produced a consistent pattern of results, such that the anger composite positively correlated with military attitudes and social conservatism, but did not correlate with healthcare attitudes. Once fear and sadness were controlled, the effects of anger from terrorist threat was broadband, such that anger was associated with pro-conservative attitudes (i.e., social conservatism, hawkishness), and inversely associated with liberal healthcare attitudes. A complementary analysis demonstrated that the distinct effects of fear and sadness, controlling for anger, were associated with pro-liberal views. In particular, sadness was correlated with greater support for healthcare attitudes, and less support for both of the conservative attitudes indices. With respect to fear, this composite was *only* correlated with greater support for healthcare attitudes. In contrast, there was a null correlation between fear and the social conservatism index. Taken as a whole, these findings are broadly consistent with research by Lambert and colleagues (Eadeh et al., 2017; Lambert et al., 2010).

I next conducted two subsequent analyses, designed to examine the relative “broadness” of these effects, to see if anger-driven effects centralized around military attitudes, or if they were relatively more diffuse. First, I examined whether the effects of anger on military attitudes may have been suppressed by its shared variance with other measures of political ideology. In this case, I performed a partial correlation between anger and military attitudes, after controlling

for fear, sadness, condition assignment, and the other attitudes indices. This yielded a weak significant effect ( $r = 0.12, p = 0.05$ ). I performed a complementary set of analyses, examining the effects of anger on the social conservatism and healthcare components, after controlling for sadness, fear, condition assignment, and the military attitudes index. These analyses yielded null effects between anger and health attitudes ( $r = -0.09, p = 0.17$ ), and anger and social conservatism ( $r = 0.11, p = 0.07$ ).

### **Healthcare Threat versus Control**

I first examined the correlations between anger and fear on the political attitudes indices, after controlling for the healthcare threat versus control contrast. These analyses, as presented in the top pane of Table 10, show that all negative mood indices were positively correlated with healthcare attitudes, and inversely correlated with social conservatism. These findings present a clear contrast from the partial correlations presented in the section immediately above, such that negative moods were positively correlated with liberal political ideology.

Following the zero-order correlations presented above, I ran a set of partial correlation analyses, to examine the distinct effects of anger (controlling for fear) and fear (controlling for anger) on all of the political attitudes indices. First turning to the distinct effect of anger, I found the link between anger and healthcare attitudes remained statistically significant, whereas the once-significant effects for social conservatism disappeared. Turning to the distinct effects of fear, there no longer remained a significant effect between fear and healthcare attitudes.

To maintain consistency with the contrast directly above, I examined whether the anger-fueled effects centralized around healthcare attitudes, or if the effects broadened out to the social conservatism and hawkish indices. First, I examined whether the effects of anger on healthcare attitudes may have been suppressed by its shared variance with the other political indices.

Controlling for these indices had little effect on the link between anger and healthcare attitudes ( $r = 0.18, p < .01$ ). I next examined the distinct relationships between anger and support for both measures of political conservatism, after controlling for healthcare attitudes. These effects were in the same general direction as the partial correlation analyses in Experiment 2, such that anger was associated with hawkish attitudes ( $r = 0.13, p = .05$ ) but not significantly correlated with social conservative attitudes ( $r = 0.09, p = 0.17$ ).

### **Mediation Analyses**

Formal mediation analyses were conducted for the two contrasts presented above. The first mediation included the ISIS prime versus control contrast as the independent measure (X), anger, fear, and sadness as the mediating variables (M1-M3), and military attitudes as the outcome measure. This analysis, as seen in Figure 5A, yielded a significant indirect effect, such that anger led to greater support for aggressive military attitudes. Moreover, there was a significant indirect effect for sadness, such that higher levels of sadness contributed to lower support for hawkish attitudes. This finding is consistent with mediation analyses from Experiment 1, and previous research in this area (Eadeh et al., 2017; Lambert et al., 2010).

Given the pattern of results shown in Table 9, one would also expect a similar pattern of mediation to occur with social conservatism. In particular, when I repeated the preceding set of analyses with social conservatism as the criterion variable, this analysis also revealed a significant evidence for anger based mediation,  $b = 0.54, se = 0.18$  95% CI (0.20/0.90) (I do not report the graph corresponding to that analysis given its redundancy with the implications of Figure 5A.)

A second mediation analysis was conducted to examine the effects of the healthcare threat prime on healthcare attitudes, as mediated by changes to anger. This formal analysis



included the healthcare threat versus control contrast as the independent measure (X), anger and fear as the mediating variables (M1-M2), and healthcare attitudes as the outcome measure (Y). This analysis, as seen in Figure 5B, yielded a significant indirect effect, such that led to greater support for healthcare attitudes. I performed additional mediation analyses, this time replacing sadness with fear. These analyses are presented in Figure 5C. Analyses indicated a significant indirect effect of priming condition on healthcare attitudes, through sadness. Moreover, the indirect effects for fear were not statistically significant. This finding is somewhat inconsistent with the mediation analysis from Experiment 2, which did not show evidence of sadness-based mediation.

### **Supplemental Analyses with LIWC**

I again examined language used in the writing task and created custom dictionaries for fear/anxiety, anger, and sadness-related words using the LIWC program. In particular, I examined the correlation between the LIWC and the attitudes indices within the experimental conditions (i.e., healthcare threat, terrorist threat). Because these data sometimes contained significant level of positive skewness (with some skews greater than 2.0), I utilized a series of different skew reduction techniques to lessen skew, including the natural log, square root, and cube root (see Decoster, 2001). Since the natural log transformation reduced the most skew, I performed a series of correlation analyses for each threat condition with this statistic. First, I examined the effects of each of these indices on political attitudes. Next, I examined the partial correlation effects for anger, controlling for fear, and sadness. Then, I conducted an additional partial correlation analysis, examining the roles of fear and sadness, controlling for condition assignment and anger. These results are presented in Table 11 for the ISIS condition, and Table 12 for the healthcare threat condition.

## Discussion

The findings from Experiment 3 provide robust evidence that bears on the question of context-independence. The *context* in which emotion is activated plays an important role in its consequences on attitudes. When participants read about a justice violation pertaining to insurance malfeasance, anger (and other emotions) from this manipulation increased support for liberal healthcare policies. In contrast, when participants were primed with terrorism threat, negative mood, but more specifically anger, led to greater support for hawkish attitudes.

These findings bring to question the context-independence hypothesis proposed by some researchers in judgment and decision-making, implying that the context in which an emotion is activated does not matter for any shifts in attitudes (cf. Goldberg et al., 1999; Johnson & Tversky, 1983; Lambert et al., 2010, s4; Lerner et al., 1998; Lerner & Keltner, 2000; 2001). Instead, the above-mentioned findings provide consistent leverage that the manner in which affect is activated has important consequences for any changes in attitudes and behaviors (Barrett, 2013; 2014; Eadeh et al., 2017; Frijda, 1986; 1988; Wilson-Mendenhall et al., 2011).

These findings are not without some caveats, of course. First, anger was not the only negative mood that produced greater support for liberal healthcare policies. Indeed, the mood-liberal attitudes link was *also* present for sadness. These findings differ from the emotional consequences from terrorist threat, where sadness suppressed the relationship between anger and hawkish attitudes.

Of course, it is possible the threatening context (the denial of life-prolonging treatment to a cancer-stricken child) itself contributed to sadness producing greater support for healthcare policies. Future research in this domain should consider activating threat with a relatively more distinct affective signature to test whether other negative moods besides contribute to support for

left-leaning political policies. Nevertheless, these findings do not directly bear on the main conclusions from the current research, in that the context in which an emotion is activated plays an important role in the direction of consequences in judgment and decision-making.

### **General Discussion**

There is a general tradition of research in affective science suggesting different affective states (e.g., anger vs. anxiety) are associated with a relatively unique set of goals and motives (Frijda, 1986; 1988; Lerner & Keltner, 2000; 2001; Schwarz & Clore, 2007). Although this approach yields solid empirical evidence, one generally unanswered question pertained to whether the context in which affect is elicited produces different consequences. Some researchers consistently find that affect generated in one context could contribute to shaping decision-making in a completely different context (cf. Goldberg et al., 1999; Johnson & Tversky, 1983; Lambert et al., 2010, s4; Lerner et al., 1998; Lerner & Keltner, 2000; 2001).

Contrasting these findings are an approach offered by many in the emotion literature stipulating that the context in which an emotion is activated ought to play an important role in shaping attitudes and behaviors (Barrett, 2013; 2014; Eadeh et al., 2017; Frijda, 1986; 1988; Wilson-Mendenhall et al., 2011). For instance, research by Eadeh et al. (2017) showed that the anger-fueled effects from a personally relevant justice violation (vs. terrorism) (“Think about a time where you were treated unfairly”) did *not* contribute to support for a fictional hawkish politician. Instead, anger-fueled support for this politician was only present when anger was evoked through the threat of terrorism.

The findings presented here provide a reasonable test of the context-independence hypothesis. Across three studies, affect was elicited by reminding participants about the threat of terrorism (Experiment 1; Experiment 3), or the threat of healthcare (Experiments 2-3). After

successfully demonstrating that affect was aroused (compared to control), reminders of threat from terrorism produced support for conservative political attitudes, as mediated by changes in anger. In contrast, the findings from the healthcare threat condition demonstrate that anger and sadness from this type of threat led to greater support for liberal healthcare attitudes. These latter analyses are extremely important as they bear on the motivated social cognition model championed by Jost and colleagues (Jost et al., 2003). Notably, their model stipulates that the phenomenological experience of threat leads to broadband shifts in support for conservative political ideology. As seen in the experiments involving the healthcare prime, these findings were not consistent with this particular model.

### **Caveats and Directions for Future Research**

The current research provides an excellent test case for exploring the context-dependent relationship between affect and social judgment. As it currently stands, the present research was initially grounded in exploring the role of anger, as it often provides motivation to rectify a past injustice (Darley & Pittman, 2003; Frijda, 1986; 1988; Smith & Ellsworth, 1985). Of course, my point is that the nature of the actual context in which that injustice event is activated clearly played an important role in distinguishing the link between affect and social judgment.

With these considerations in mind, the “what” or “whom” of the context-dependence framework could presumably offer insights into *other* negative emotions. For instance, fear is an aversive negative emotion, related to uncertainty and a perceived loss of situational control (cf. Lambert et al., 2010; Lerner & Keltner, 2000; 2001; Smith & Ellsworth, 1985). Assuming the context-dependence hypothesis is true, then the “who” or “what” *should* matter when completing decision-making tasks after measurement of mood. As discussed by Barrett (2013; 2014), feeling fear from public speaking and fear from a predator might equally evoke fear, however the *thing*

to fear in each case is probably different. It seems implausible to assume that the consequences of fear are static, and not contingent on the event producing this particular feeling state.

Another point of consideration is the role of emotional spillover (also known as “incidental” emotion; Han, Lerner, & Keltner, 2007; Keltner & Lerner, 2010; Lerner & Keltner, 2000; 2001; Loewenstein & Lerner, 2003; Pham, 2007; Yates, 2007) into other attitudinal clusters not necessarily connected to the mood-inducing event. This form of “incidental” emotion played a role in the current research, with respect to the anger-driven findings from terrorism *also* inducing support for social conservative attitudes. In contrast, the affect-driven effects for the healthcare prime were generally narrower, such that anger was often associated only with healthcare attitudes, and not much else. This begs the question of whether particular threatening contexts like terrorism provide different patterns of diffuseness, in comparison to threatening contexts like the threat of insurance malfeasance.

Finally, it is important to note the prospective benefit of hindsight in this dissertation (Fischhoff & Beyth, 1975). In other words, there were a few methodological choices I might have done differently, given my current knowledge from this dissertation.

First, the choice of the “threat” prime in Experiment 2—having to do with insurance malfeasance—introduced a bit more complexity than I would have wished. In particular, note that this prime triggered a state of affairs in which anger was much more strongly correlated with sadness compared to Experiment 1. Although this asymmetry is perhaps more distracting than devastating, it does represent a difference across the two threat paradigms that makes things a little more complicated than would otherwise be the case. In retrospect, I would have selected a topic in the same domain, but with a starkly different emotional signature. One manipulation that readily comes to mind is the rising price of life-saving prescription medication, including, but not

limited to, Daraprim and EpiPen. I believe this type of manipulation would probably produce similar anger-driven shifts to the current healthcare manipulation, but would provide a “purer” manipulation of anger. This prospective manipulation would probably reduce multicollinearity found across Experiments 2 and 3, when participants read about the insurance malfeasance case.

Beyond changing the particular manipulation, I believe the current dissertation may have benefitted from including a greater assortment of different negative mood states. In particular, this dissertation *only* focused on three negative affective indices (e.g., anger, fear, sadness). It would be interesting to examine whether other negative mood indices (e.g., disgust, shame) would provide any additional leverage on understanding the role of different negative emotions in shaping social judgment.

In contrast, it might also be that broader categorizations of affective experience (i.e., negative affect vs. positive affect) might have produced a similar set of findings. Future research on this topic might consider constructing *both* broadband and narrowband measures of affective experience, to see if a similar pattern of results might emerge if one type of measure is used, compared to the other.

### **Conclusion**

At its best, I believe social psychology provides a basic understanding of mental processes and potentially contributes to the alleviation of real-world social problems. This is important in my own work here, as my interest in testing theories of affect and attitudes has been accompanied by its practical implications. Consistent with this approach, I believe the present research provided a greater understanding of the role of emotions in social judgment, but also provides practical applications beyond the laboratory. The current work finds consistent evidence that the nature in which an emotion is activated plays an important role in the manner this

emotion shapes subsequent decision-making. I believe the current work has clear implications for public policy, which can conceivably range from the Flint water crisis, anger, and greater support for infrastructure improvements, to the 2008 economic recession, anxiety, and reduced support for regulatory agencies (i.e., Securities and Exchange Commission). These are a handful of the ways I plan to examine whether different threats can shape social attitudes. In conclusion, I hope my research is able to both generate future scholarly research and carry far-reaching consequences as they relate to public policy.

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## FOOTNOTES

<sup>1</sup> The definition of affect is of great interest to many scholars in the literature (Batson et al., 1992; Ekkekakis, 2013). It is sometimes considered an “umbrella term” (Fleckenstein, 1991) in which emotions, feelings, and moods fall under. In this dissertation, I sometimes use the term affect broadly, to mean any event or situation that alters the physiological state of the organism, without making distinctions between whether the affective reaction is perceived by the individual in a “mood-like” or an “emotion-like” state.

<sup>2</sup> Some of my measures of negative affect revealed relatively high levels of positive skew (skews > 1.0). This included the anger, fear, and sadness composites for Experiment 1, and the fear composite for Experiments 2 and Experiment 3. To correct for this, the affected statistical composites are based on the natural log. For ease of interpretability, however, mean levels of these composites are reported in their original metric. I obtained a very similar pattern of results when I conducted analyses on the non-transformed data.

<sup>3</sup> Since the political attitudes indices were always completed after the experimental manipulation, it is possible that the systematic between-condition differences inflated the appearance of unidimensionality. To account for this possibility, I ran principal components analyses on the residual of the political attitudes items, after accounting for any variance associated with condition assignment. One analysis was based on the residuals for each individual item from the battery of items pertaining to social conservatism, whereas the other was based on the residuals from the full index of hawkishness items. As expected, analyses indicated the presence of unidimensionality, as the social conservatism (eigenvalue = 8.10, variance explained = 40.50%) and hawkishness components (eigenvalue = 7.95, variance explained = 66.25%) displayed similar component loadings, compared to those presented in the

main text. As anticipated, these variables were also highly correlated to one another other ( $r = 0.69, p < .001$ ). Given that the unidimensionality assumption was met, all primary analyses in the text utilized the *original* PCA component loadings as dependent measures

<sup>4</sup>I performed preliminary PCA analyses, in order to account for any systematic variance due to condition assignment. To account for this, I conducted three PCA analyses on the residuals (i.e., removal of shared variance accounted for by condition assignment) for the political attitudes indices. As expected, analyses indicated the presence of unidimensionality, as the health attitudes (eigenvalue = 7.04, variance explained = 39.11%), social conservatism (eigenvalue = 8.22, variance explained = 41.10%) and hawkishness components (eigenvalue = 7.00, variance explained = 58.34 %) displayed similar component loadings, compared to those presented in the main text.

Moreover, these components were correlated in a similar fashion to the factors presented in the main text, such that the residualized health attitudes component was inversely correlated with both the hawkish ( $r = -0.46, p < .001$ ) and the social conservatism components ( $r = -0.72, p < .001$ ). In addition, the latter two indices were positively correlated ( $r = 0.67, p < .001$ ). Given that the unidimensionality assumption was met, all primary analyses in the text utilized the *original* PCA component loadings as dependent measures.

<sup>5</sup>An additional between-subjects analyses was included in this experiment, manipulating whether participants completed all of the political attitudes indices in one block (consistent with Experiments 1 and 2), or in separate blocks, presented in a randomized fashion (i.e., healthcare attitudes, hawkish attitudes, social conservative attitudes). The logic of this manipulation was designed to inspect whether anger-based changes in were reflective of answering these questions at approximately the same time. In other words, perhaps anger generated from terrorist threat

induced support for social conservative attitudes, because of its proximity to the hawkish attitudes block. A series of analyses found no evidence whatsoever for this ordering effect. For these reasons, primary analyses reported here collapsed over this factor.

<sup>6</sup>I performed preliminary PCA analyses in Experiment 3, in order to account for any systematic variance due to condition assignment. To account for this, I conducted three PCA analyses on the residuals (i.e., removal of shared variance accounted for by condition assignment) of the political attitudes indices. As expected, analyses indicated the presence of unidimensionality, as the health attitudes (eigenvalue = 9.24, variance explained = 42.02%), social conservatism (eigenvalue = 9.51, variance explained = 43.21%) and hawkishness components (eigenvalue = 8.98, variance explained = 64.11 %) displayed similar eigenvalues, compared to those presented in the main text.

Moreover, these components were correlated in a similar fashion to the factors presented in the main text, such that the residualized health attitudes component was inversely correlated with both the hawkish ( $r = -0.49, p < .001$ ) and the social conservatism components ( $r = -0.73, p < .001$ ). In addition, the latter two indices were positively correlated ( $r = 0.70, p < .001$ ). Given that the unidimensionality assumption was met, all primary analyses in the text utilized the *original* PCA component loadings as dependent measures.

Table 1: Correlation Analyses between Mood Indices, Experiment 1

<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>
1. Anger	(.93)		
2. Sadness	.67	(.81)	
3. Fear	.80	.72	(.95)
<i>M</i>	1.78	1.75	1.67
<i>SD</i>	1.03	0.87	0.98

Note: all correlations were significant at  $p < .001$ . Reliability estimates for each index are presented in the cross-diagonal.

Table 2: Partial Correlation of Mood Composites to Political Attitudes, Experiment 1

	Hawkish Attitudes	Social Conservatism
Zero order correlations		
Anger	.26**	.28**
Sadness	.08	.09
Fear	.13	.15†
Controlling for sadness and fear		
Anger	.28**	.28**
Controlling for anger		
Sadness	-.15†	-.15†
Fear	.02	-.01

*Note:* Values shown above control for the experimental manipulation of threat.

\*\*  $p < .01$ , †  $p < .1$

Table 3: Correlation of LIWC Composites to Political Attitudes, Terrorist Threat Condition, Experiment 1

	Hawkish Attitudes	Social Conservatism
Zero order correlations		
Anger	.24*	.23*
Sadness	.20†	.04
Fear	-.06	-.23†
Controlling for sadness and fear		
Anger	.21†	.22†
Controlling for anger		
Sadness	.18	.01
Fear	-.05	-.22†

Note: \*  $p < .01$ , †  $p < .1$

Table 4: Correlation Analyses between Mood Indices, Experiment 2

<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>
1. Anger	(.97)		
2. Sadness	.92	(.87)	
3. Fear	.69	.76	(.94)
<i>M</i>	2.25	2.22	1.78
<i>SD</i>	1.44	1.26	1.10

Note: all correlations were significant at  $p < .001$ . Reliability estimates for each index are presented in the cross-diagonal.



Table 5: Correlation of Mood Composites to Attitudes Indices, Experiment 2

	Healthcare	Social Conservative	Hawkish
Zero order correlations			
Anger	.23***	-.06	.04
Sadness	.17***	-.04	.08
Fear	.17**	-.05	.06
Controlling for fear			
Anger	.17**	-.04	.01
Controlling for anger			
Fear	.05	-.02	.04

*Note:* Values shown above control for the experimental manipulation of threat.

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

Table 6: Correlation of LIWC Composites to Political Attitudes in Healthcare Threat Condition, Experiment 2

	Healthcare	Social Conservative	Hawkish
Zero order correlations			
Anger	.21**	-.25**	-.11
Sadness	-.09	.08	.03
Fear	.03	.05	.03
Controlling for sadness and fear			
Anger	.23*	-.26**	-.12
Controlling for anger			
Fear	.10	.03	-.01
Sadness	-.09	.09	.05

Note: \*\*  $p < .01$ , \*  $p < .05$

Table 7: Correlation Analyses of Mood Indices, Experiment 3

<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>
1. Anger	(.97)		
2. Sadness	.83	(.85)	
3. Fear	.65	.70	(.95)
<i>M</i>	2.38	2.32	1.94
<i>SD</i>	1.44	1.19	1.16

Note: all correlations were significant at  $p < .001$ . Reliability estimates for each index are presented in the cross-diagonal.

Table 8: Mean Differences Across Priming Conditions Across Mood Indices, Experiment 3

	Control	Terrorist Threat	Healthcare Threat
Mood			
Anger	1.12 (0.37) <sup>a</sup>	2.74 (1.30) <sup>b</sup>	3.19 (1.42) <sup>c</sup>
Fear	1.17 (0.43) <sup>a</sup>	2.48 (1.22) <sup>b</sup>	2.12 (1.16) <sup>c</sup>
Sadness	1.27 (0.44) <sup>a</sup>	2.59 (0.99) <sup>b</sup>	3.04 (1.19) <sup>c</sup>

	Index of Effect Sizes (Cohen's <i>d</i> )		
	Control versus Terrorist Threat	Control versus Healthcare	Terrorist Threat versus Healthcare Threat
Anger	1.70	2.00	0.33
Fear	1.43	1.09	0.30
Sadness	1.72	1.97	0.41

Note: Numbers within the parentheses indicate the standard deviation of this value. Means in each row sharing the same superscript are not significantly different from one another at  $p < 0.05$ .

Table 9: Partial Correlation of Mood Composites to Political Attitudes, ISIS versus Control, Experiment 3

	Healthcare	Social Conservative	Hawkish
Zero order correlations			
Anger	-.09	.21**	.24***
Sadness	.11	.03	.05
Fear	.09	.02	.12†
Controlling for sadness and fear			
Anger	-.20**	.25***	.26***
Controlling for anger			
Sadness	.21**	-.14*	-.14*
Fear	.15*	-.11†	.00

*Note:* Values shown above control for the experimental manipulation of threat.

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ , † $p < .1$

Table 10: Partial Correlation of Mood Composites to Political Attitudes, Healthcare Threat versus Control, Experiment 3

	Healthcare	Social Conservative	Hawkish
Zero order correlations			
Anger	.24***	-.16*	-.05
Sadness	.23***	-.19**	-.10
Fear	.16*	-.18**	-.13
Controlling for fear			
Anger	.18**	-.06	.03
Controlling for anger			
Fear	.03	-.12†	-.12†

*Note:* Values shown above control for the experimental manipulation of threat.  
 \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ , † $p < .1$

Table 11: LIWC Correlations, ISIS condition, Experiment 3

	Healthcare	Social Conservative	Hawkish
Zero order correlations			
Anger	-.16†	.20*	.16†
Sadness	-.08	.05	.04
Fear/Anxiety	.08	-.12	-.06
Controlling for fear and sadness			
Anger	-.16†	.20*	.15†
Controlling for anger			
Fear/Anxiety	.09	-.13	-.07
Sadness	-.05	.03	.02

Note: \*  $p < .05$ , †  $p < .1$

Table 12: LIWC Correlations, Healthcare Threat Condition, Experiment 3

	Healthcare	Social Conservative	Hawkish
Zero order correlations			
Anger	.14	-.08	-.02
Sadness	.02	-.06	-.06
Fear/Anxiety	.10	-.03	.04
Controlling for fear and sadness			
Anger	.16†	-.08	-.01
Controlling for anger			
Fear /Anxiety	.13	-.04	.04
Sadness	.02	-.06	-.06



Figure 1: Anticipated findings

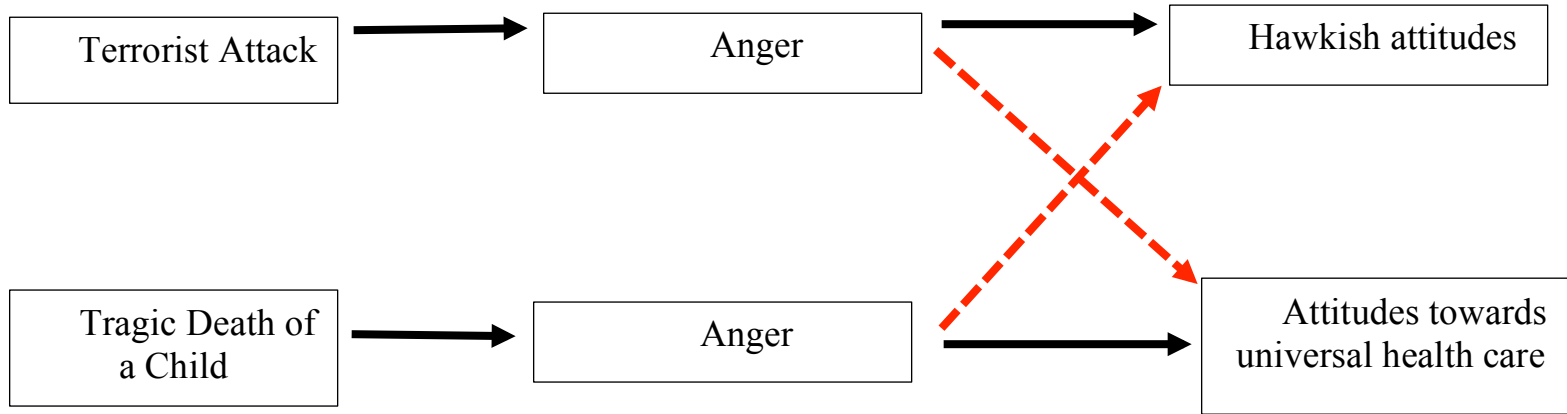
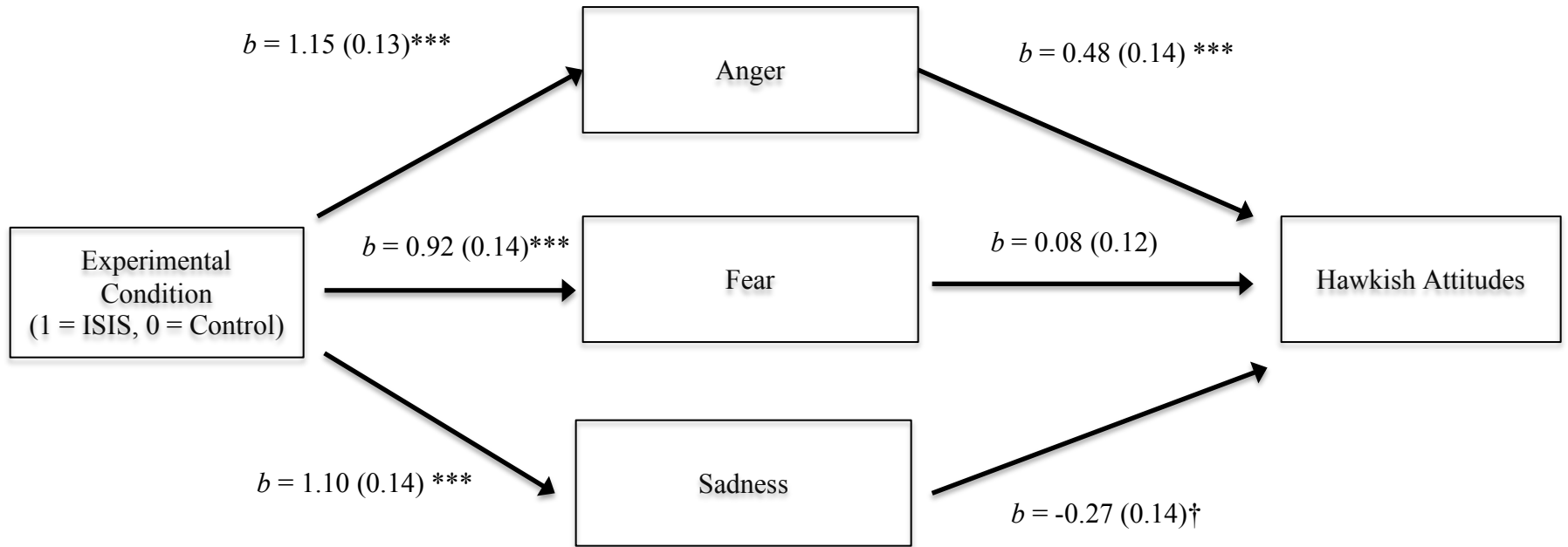


Figure 2: Mediation Analyses on Hawkish Attitudes, Experiment 1

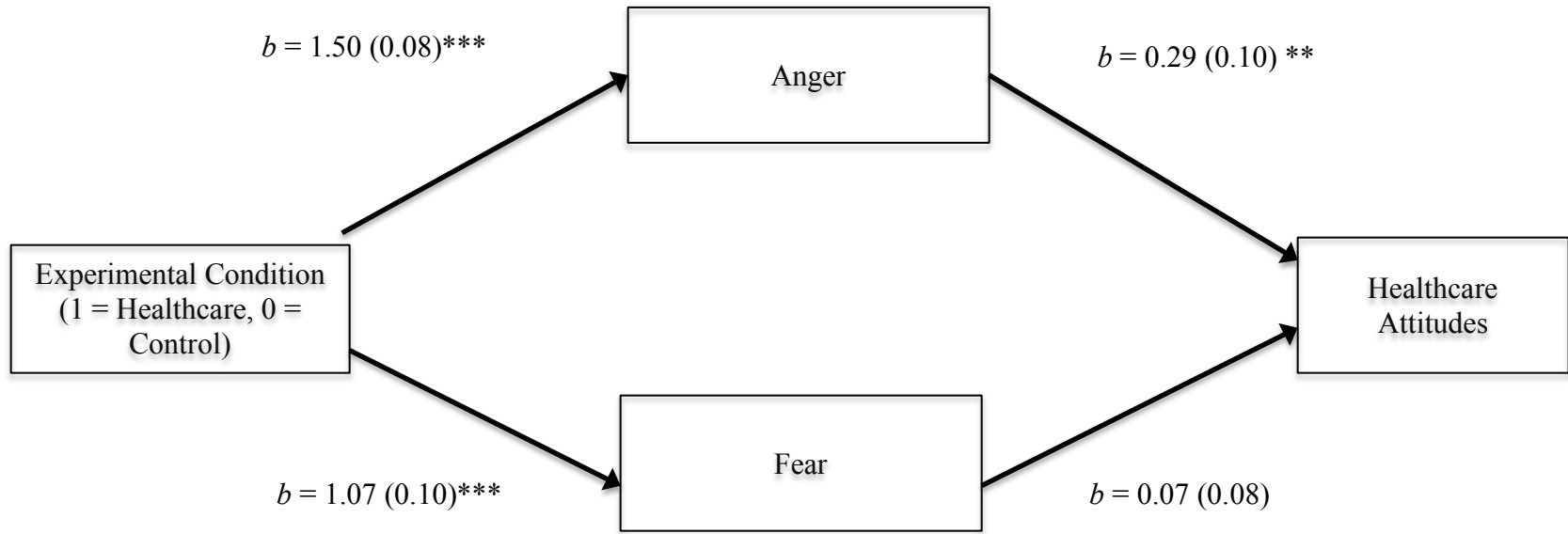


Index of Indirect Effects

Mediating Variable	<i>b</i>	<i>se</i>	95% LLCI	95% ULCI
Anger	0.56	0.19	0.25	0.99
Fear	0.07	0.11	-0.14	0.31
Sadness	-0.30	0.16	-0.65	-0.02

Note: numbers in parentheses refer to standard error estimates. †  $p < .10$ , \*\*\*  $p < .001$ .

Figure 3: Mediation Analyses on Healthcare Attitudes, Experiment 2

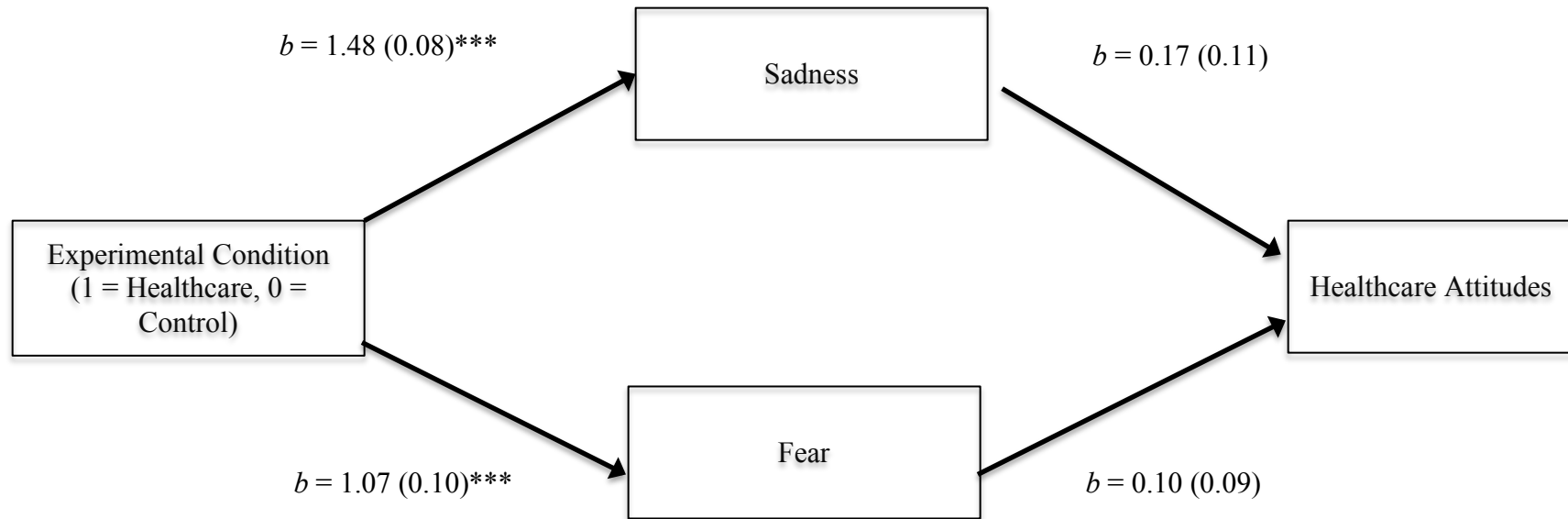


Index of Indirect Effects

Mediating Variable	<i>b</i>	<i>se</i>	95% LLCI	95% ULCI
Anger	0.44	0.15	0.16	0.73
Fear	0.08	0.08	-0.08	0.27

Note: numbers in parentheses refer to standard error estimates. \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Figure 4: Mediation Analyses on Healthcare Attitudes, Experiment 2

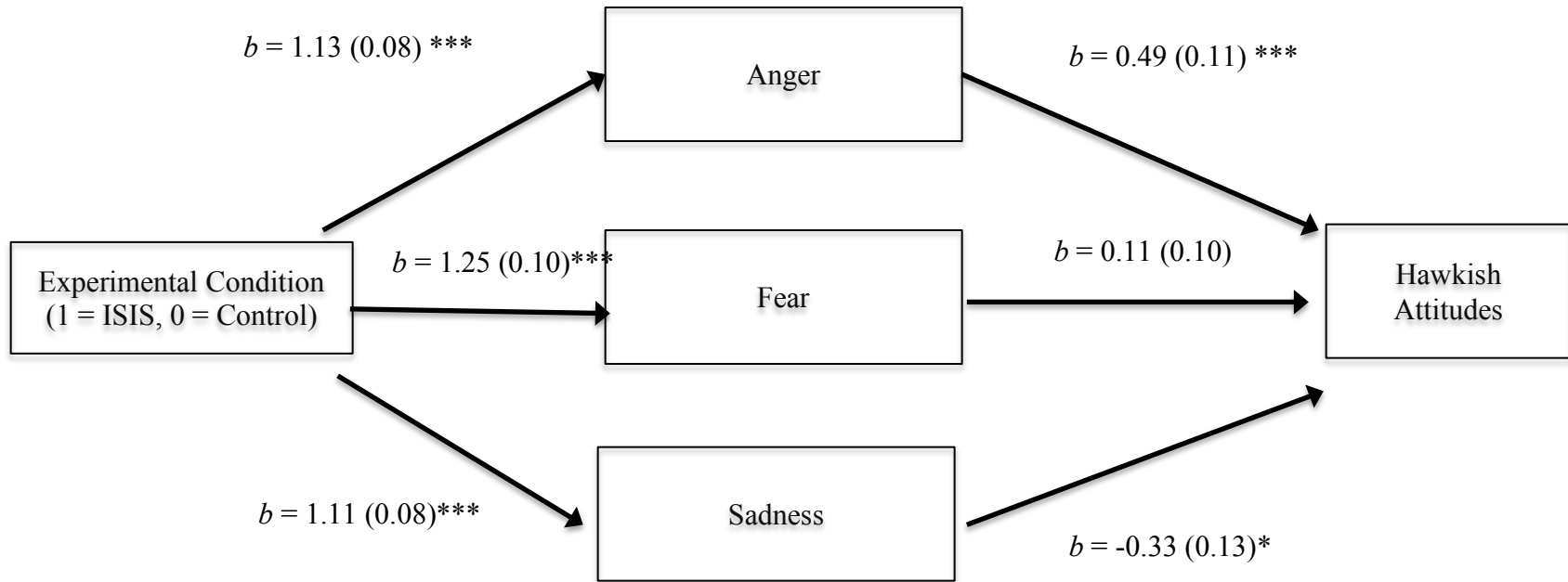


Index of Indirect Effects

Mediating Variable	<i>b</i>	<i>se</i>	95% LLCI	95% ULCI
Sadness	0.25	0.17	-0.09	0.59
Fear	0.11	0.10	-0.09	0.31

Note: numbers in parentheses refer to standard error estimates. \*\*\*  $p < .001$ .

Figure 5A: Mediation Analyses on Hawkish Attitudes, Experiment 3

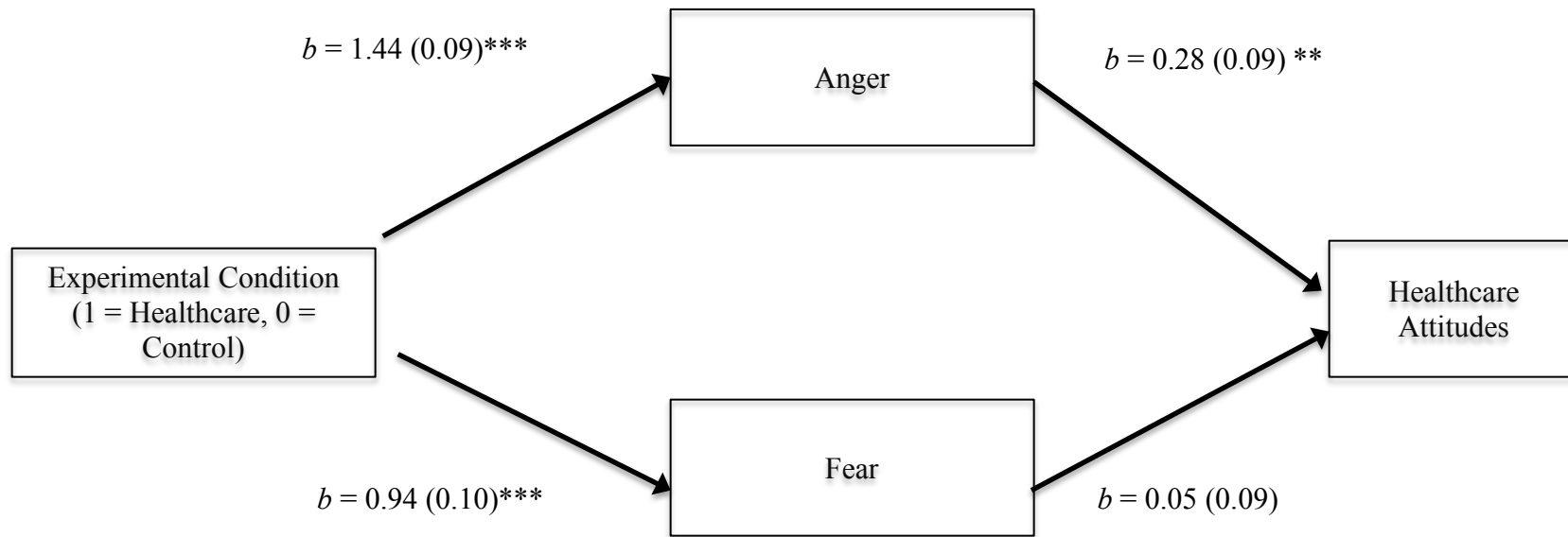


Index of Indirect Effects

Mediating Variable	<i>b</i>	<i>se</i>	95% LLCI	95% ULCI
Anger	0.55	0.15	0.26	0.87
Fear	0.14	0.12	-0.08	0.39
Sadness	-0.36	0.16	-0.70	-0.08

Note: numbers in parentheses refer to standard error estimates. \*  $p < .05$ , \*\*\*  $p < .001$ .

Figure 5B: Mediation Analyses on Healthcare Attitudes, Experiment 3

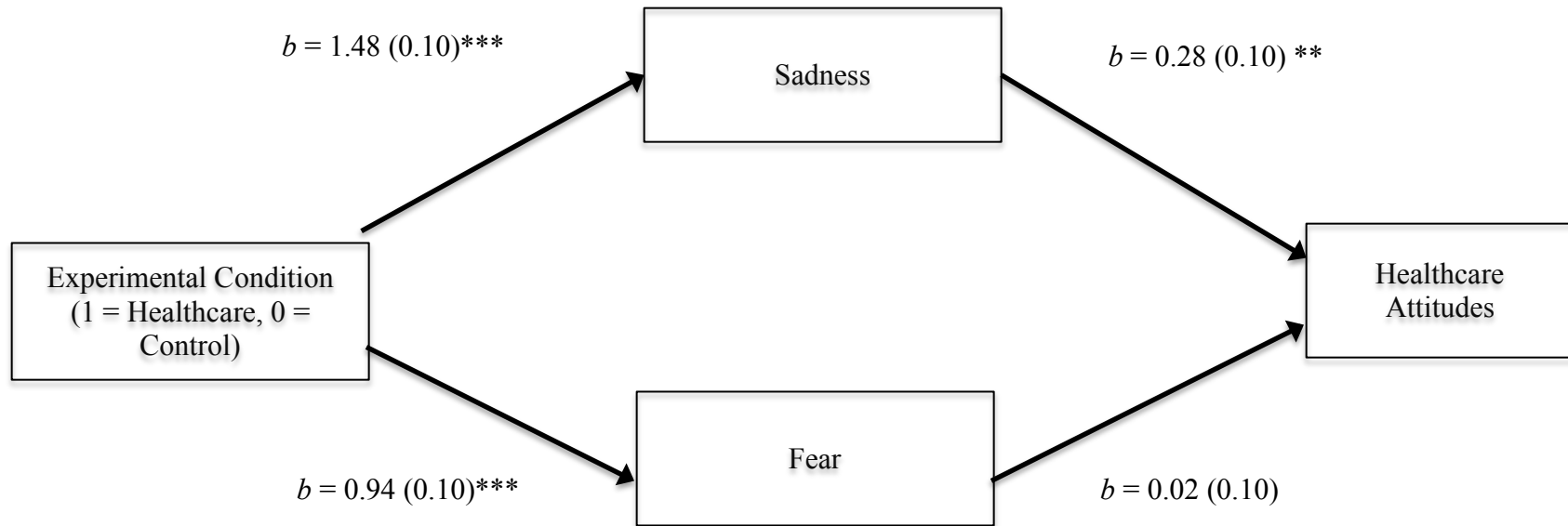


Index of Indirect Effects

Mediating Variable	<i>b</i>	<i>se</i>	95% LLCI	95% ULCI
Anger	0.40	0.15	0.08	0.66
Fear	0.04	0.09	-0.12	0.21

Note: numbers in parentheses refer to standard error estimates. \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Figure 5C: Mediation Analyses on Healthcare Attitudes, Experiment 3



Index of Indirect Effects

Mediating Variable	<i>b</i>	<i>se</i>	95% LLCI	95% ULCI
Sadness	0.41	0.16	0.10	0.72
Fear	0.02	0.09	-0.15	0.20

Note: numbers in parentheses refer to standard error estimates. \*\*  $p < .01$ , \*\*\*  $p < .001$ .

## Appendix A: Political Attitudes Items, Experiments 1-3

### Hawkishness

1. Military spending is too high.
2. The best way to ensure peace is through military strength.
3. Using overwhelming military force is the best way to defeat terrorism around the world.
4. A strong military is the most important ingredient to keeping America safe.
5. Diplomatic solutions to terrorism are almost always preferable to the use of military force.
6. Military force is not an effective way to combat terrorism.
7. I am strongly in favor of going to war against enemies of the United States.
8. If someone asked me to march in an anti-war rally, I would probably go.
9. America needs a strong military in order to combat terrorist activity across the world.
10. It is in our best interest that we improve our military power.
11. America's military might needs to be substantially improved in order to defeat terrorism across the globe.
12. Military spending is far too high in our country.

### Additional Items, Experiment 3

13. Federal funding of our military should be our top priority, even if it means a reduction in funding for other areas.
14. Our military is already receiving enough of our tax dollars; we should be concerned about funding other needs of the American people.

### Social Conservatism Attitudes

1. I am happy that same-sex marriage is now legalized.
2. Permits should be required for gun ownership.
3. Homosexual relations are morally acceptable.
4. Man evolved from other animals.
5. Abortion should be legal in all circumstances.
6. We should outlaw capital punishment.
7. Taxes on the rich are too low.
8. We should invest greater time and resources into renewable energy sources (e.g., wind and solar power).
9. Carbon dioxide and other greenhouse gasses should be aggressively regulated by the EPA, and violators of the law should be severely punished.
10. I strongly support prayer in public schools.
11. Immigrants today are a burden on our country because they take our jobs, housing and health care.
12. The U.S. government already spends too much giving money to the poor.
13. Taxes on the richest citizens should not be increased.
14. Stricter environmental laws and regulations cost too many jobs and hurt the economy.
15. There should be less gun control in this country, not more
16. Individuals and businesses should not be forced to service people that could potentially conflict with their own religious principles.



17. Business owners ought to have the freedom to operate their business that is consistent with their own religious principles.
18. Abortion should be outlawed in all circumstances.
19. Minorities who can't get ahead in this country are mostly responsible for their own condition.
20. Government regulation of business usually does more harm than good.

### **Additional Items, Experiment 3**

21. We need to protect racial minorities from disproportionate police violence.
22. I would support policy that provides increased funding for education.

### **Healthcare Items (Experiment 2)**

1. I would support aggressive regulation of health insurance companies.
2. I believe that we should aggressively expand health care coverage for the poorest Americans.
3. I would support regulation of privatized health insurance companies.
4. Making healthcare attainable should be a priority for the government.
5. Government does not have the obligation to provide healthcare for everybody.
6. Healthcare companies should have some discretion in paying for experimental treatments.
7. Most of the time, healthcare companies do right for their customers.
8. I would support more careful monitoring of health insurance companies.
9. It should be illegal for health insurance companies to refuse care to patients that have demonstrated need.
10. Health insurance companies should be required to pay for all life-saving care.
11. The government should have a minimal role in the healthcare industry.
12. The government has a responsibility to provide healthcare for low-income individuals.
13. People ought to be responsible for their own healthcare costs and needs.
14. Government-run healthcare systems are inefficient and costly to tax-payers.
15. I would support punishing the healthcare industry if their actions contributed to harming an individual.
16. I would support fining health insurers millions of dollars if their actions contributed to harming their customers.
17. Health insurers that illegally deny coverage to patients with need should lose their licenses to operate as insurers.
18. I would imprison CEOs of health insurance companies that illegally denied coverage to a patient in need.

### **Additional Items, Experiment 3**

19. Federal funding of our health care system should be our top priority, even if it means a reduction in funding for other areas.
20. No additional tax dollars should go to providing health care coverage.
21. Healthcare companies that do wrong should be publicly shamed for their actions.
22. Any health insurance employees who illegally denies healthcare coverage should be immediately fired.

## Appendix B: Experimental Conditions

### ISIS Condition



#### Isis: A Threat to the West

The rise of the Islamic State in Iraq and Syria (ISIS) has wreaked havoc around the world, with the loss of more than 1200 lives outside of Iraq and Syria in attacks linked to ISIS. From broadcasting the beheading of American journalists to coordinating multiple attacks on European soil, ISIS' cruelty is second to none. ISIS also inspired the 2015 San Bernardino shooting in which a couple pledged allegiance to the leader of ISIS before murdering 14 and injuring 22 at a Department of Public Health Christmas party. ISIS furthermore inspired the Orlando terrorist attack that killed 49 Americans. Terrifyingly, more could be on the way.

According to information provided to Judicial Watch by a source identified as "a high-ranking Homeland security official," ISIS jihadists have indeed remained in close quarters with the US. This includes ISIS militant Shaykh Mahmood Omar Khabir, who has lived in Mexico for over a year. According to this source, Khabir previously trained hundreds of Al Qaeda fighters in Pakistan, Afghanistan, and Yemen, and now provides training to thousands of jihadis at a base near Ciudad Juarez, which is located just across the border from El Paso, Texas. Khabir has bragged that he "could get in with a handful of men, and kill thousands of people in Texas or in Arizona in the space of a few hours." The dangers of ISIS cannot be understated. ISIS represents an ominous threat to American security.

## Healthcare Threat Condition



### **Five Year Old Cancer Patient Kyler van Nocker Dies After Being Denied Life-Prolonging Treatment by Insurance Company**

Philadelphia, Pennsylvania – One of the worst abuses practiced by private insurance companies is the use of misleading reasons to deny claims for life-saving medical treatments. Not even children are exempt from such abuses, as was the case for Philadelphia native Kyler van Nocker. Indeed, van Nocker, then 5, suffered from neuroblastoma (a rare form of childhood cancer) and was denied access to a life-prolonging treatment. After one year in remission, the cancer returned, and Kyler was once again in need of treatment.

Although Kyler’s parents Paul and Maria had health insurance, their health insurer HealthAmerica refused to pay for a treatment that doctors believed could have saved his life (MIBG treatment). The Harrisburg-based insurance provider, a subsidiary of Coventry Healthcare, considered the drug “investigational/experimental,” arguing that they denied the treatment because it had yet to be approved by the FDA.

Yet earlier that same year, HealthAmerica approved a different experimental treatment which happened to be significantly cheaper than the one recommended by Kyler’s doctors. In fact, the child’s oncologist stated that the treatment that Health America refused to pay for is considered the standard of care in Europe and the United States.

This prompted Philadelphia Daily News columnist Ronnie Polaneczky to ask, “So why, pray tell, is HealthAmerica playing the ‘experimental therapy’ card in the case of the MIBG treatment Kyler now needs? Gee, money couldn’t have anything to do with the decision, could it?”

Unfortunately, Kyler died only three months away from his sixth birthday, with the family of the child left in heavy debt by out-of-pocket medical bills.

## Control Condition



### Recent research reveals mysteries of food allergies

Food allergies or food intolerances affect nearly everyone at some point. People often have an unpleasant reaction to something they ate and wonder if they have a food allergy. One out of three people either say that they have a food allergy or that they modify the family diet because a family member is suspected of having a food allergy. But only about 5% of children have clinically proven allergic reactions to foods. In teens and adults, food allergies occur in about 4% of the total population.

This difference between the clinically proven prevalence of food allergy and the public perception of the problem is in part due to reactions called “food intolerances” rather than food allergies. A food allergy, or hypersensitivity, is an abnormal response to a food that is triggered by the immune system. The immune system is not responsible for the symptoms of a food intolerance, even though these symptoms can resemble those of a food allergy. For example, being allergic to milk is different from not being able to digest it properly due to lactose intolerance. It is extremely important for people who have true food allergies to identify them and prevent allergic reactions to food because these reactions can cause devastating illness and, in some cases, be fatal.

Food allergies involve two features of the human immune response. One is the production of immunoglobulin E (IgE), a type of protein called an antibody that circulates through the blood. The other is the mast cell, a specific cell that occurs in all body tissues but is especially common in areas of the body that are typical sites of allergic reactions, including the nose and throat, lungs, skin, and gastrointestinal tract.

The ability of a given individual to form IgE against something as benign as food is an inherited predisposition. Generally, such people come from families in which allergies are common – not necessarily food allergies but perhaps hay fever, asthma, or hives. Someone with two allergic parents is more likely to develop food allergies than someone with one allergic parent.

Appendix C: LIWC Indices Used in Primary Analyses, Experiments 1-3

	<b>Fear/Anxiety</b>		<b>Anger</b>		<b>Sadness</b>
afraid	petrif*	anger*	raging	ache*	mourn*
anxi*	restless*	angr*	irate	aching	remorse*
dread*	scare*	fume*	irritate*	depress*	sad
fear	scaring	fuming	despis*	despair*	sadde*
feared	scary	furious*	hate	devestat*	sadly
fearful*	tense*	fury	hated	down*	sadness
fearing	tensing	hostil*	hateful*	discourag*	sob
fears	tension*	mad	hater*	empty*	sobbed
fright*	uncertain*	maddening	hates	gloom*	sobbing
horr*	uncomfortabl*	madder	hating	grief	sobs
insecur*	unsure*	maddest	hatred	griev*	sorrow*
nervous	worr*	piss*	ticked	heartbreak*	unhapp*
panic*		rage*		heartbroke*	woe*
				hopeless*	

Note: Terms listed with asterisk (\*) allow for grammatical variations of core semantic concept.

## Appendix D: Component Loadings of Hawkish Items, Experiment 1

Items	Component 1
It is in our best interest that we improve our military power.	.90
A strong military is the most important ingredient to keeping America safe.	.88
America needs a strong military in order to combat terrorist activity across the world.	.87
Using overwhelming military force is the best way to defeat terrorism around the world.	.87
Military force is not an effective way to combat terrorism.	-.86
The best way to ensure peace is through military strength.	.85
America's military might needs to be substantially improved in order to defeat terrorism across t...	.84
Military spending is far too high in our country.	-.84
Military spending is too high.	-.83
I am strongly in favor of going to war against enemies of the United States.	.80
If someone asked me to march in an anti-war rally, I would probably go.	-.59
Diplomatic solutions to terrorism are almost always preferable to the use of military force.	-.57

## Appendix E: Component Loadings of Social Conservative Attitudes, Experiment 1

Items	Component 1
Stricter environmental laws and regulations cost too many jobs and hurt the economy.	.78
Minorities who can't get ahead in this country are mostly responsible for their own condition.	.73
The U.S. government already spends too much giving money to the poor.	.72
Business owners ought to have the freedom to operate their business that is consistent with their own religious principles.	.70
Individuals and businesses should not be forced to service people that could potentially conflict with their own religious principles.	.69
Taxes on the richest citizens should not be increased.	.69
Immigrants today are a burden on our country because they take our jobs, housing and health care.	.67
I strongly support prayer in public schools.	.65
Government regulation of business usually does more harm than good.	.65
I am happy that same-sex marriage is now legalized.	-.64
Taxes on the rich are too low.	-.64
Carbon dioxide and other greenhouse gasses should be aggressively regulated by the EPA, and violators of the law should be severely punished.	-.64
Homosexual relations are morally acceptable.	-.63
There should be less gun control in this country, not more.	.62
Abortion should be legal in all circumstances.	-.62
Abortion should be outlawed in all circumstances.	.59
Permits should be required for gun ownership.	-.50
Man evolved from other animals.	-.53
We should invest greater time and resources into renewable energy sources (e.g., wind and solar power).	-.55
We should outlaw capital punishment.	-.39

## Appendix F: Component Loadings of Healthcare Items, Experiment 2

Items	Component 1
Making healthcare attainable should be a priority for the government.	.82
I believe that we should aggressively expand health care coverage for the poorest Americans.	.79
Government does not have the obligation to provide healthcare for everybody.	-.78
The government has a responsibility to provide healthcare for low-income individuals.	.77
I would support aggressive regulation of health insurance companies.	.70
I would support more careful monitoring of health insurance companies.	.67
People ought to be responsible for their own healthcare costs and needs.	-.66
Government-run healthcare systems are inefficient and costly to tax-payers.	-.65
It should be illegal for health insurance companies to refuse care to patients that have demonstrated need.	.63
The government should have a minimal role in the healthcare industry.	-.61
I would support fining health insurers millions of dollars if their actions contributed to harming their customers	.61
Health insurance companies should be required to pay for all life-saving care.	.61
I would support punishing the healthcare industry if their actions contributed to harming an individual.	.60
Health insurers that illegally deny coverage to patients with need should lose their licenses to practice.	.54
I would imprison CEOs of health insurance companies that illegally denied coverage to a patient in need.	.52
Most of the time, healthcare companies do right for their customers.	-.29
Healthcare companies should have some discretion in paying for experimental treatments.	-.28
I would support regulation of privatized health insurance companies.	.41



## Appendix G: Sample Characteristics, Experiments 1-3

### Experiment 1 (Total N = 151)

#### Age

Range	19-74 Years
<i>M</i>	35.46
<i>SD</i>	11.44

<b>Gender</b>	<b>N</b>	<b>%</b>
Male	48	31.8
Female	102	67.5
Other	1	0.7

<b>Ethnicity</b>	<b>N</b>	<b>%</b>
White/Caucasian	122	80.8
Black/African-American	10	6.6
Hispanic/Latino	13	8.6
Asian	8	5.3
American Indian/Alaskan/Hawaiian Native	3	2.0
Other	3	2.0

<b>Education</b>	<b>N</b>	<b>%</b>
Some high school	1	0.7
High school	16	10.6
Some college/associates degree	54	35.8
Bachelors degree	49	32.5
Some postgraduate study	7	4.6
Masters degree	18	11.9
Doctoral/Medical degree	5	3.3
Other	1	0.7

## Experiment 2 (Total N = 303)

### Age (1 person wrote "343"; they were removed from analyses below)

Range	18-68 Years
<i>M</i>	34.43
<i>SD</i>	10.99

<b>Gender</b>	<b>N</b>	<b>%</b>
Male	91	30.5
Female	207	69.5
Other	1	0.3
I prefer not to answer	4	1.3

<b>Ethnicity</b>	<b>N</b>	<b>%</b>
White/Caucasian	255	84.2
Black/African-American	24	7.9
Hispanic/Latino	14	4.6
Asian	13	4.3
American Indian/Alaskan/Hawaiian Native	7	2.3
Other	10	3.3

<b>Education</b>	<b>N</b>	<b>%</b>
High school	26	8.6
Some college/associates degree	135	44.6
Bachelors degree	83	27.4
Some postgraduate study	13	4.3
Masters degree	33	10.9
Doctoral/Medical degree	11	3.6
Other	2	0.7

### Experiment 3 (Total N = 388)

#### Age

Range	18-98 Years
<i>M</i>	34.90
<i>SD</i>	12.47

<b>Gender</b>	<b>N</b>	<b>%</b>
Male	116	29.9
Female	269	69.3
Other	2	0.5
I prefer not to answer	1	0.3

<b>Ethnicity</b>	<b>N</b>	<b>%</b>
White/Caucasian	316	81.4
Black/African-American	29	7.5
Hispanic/Latino	25	6.4
Asian	25	6.4
American Indian/Alaskan/Hawaiian Native	6	1.5
Other	3	0.8

<b>Education</b>	<b>N</b>	<b>%</b>
Some high school	1	0.3
High school	33	8.5
Some college/associates degree	146	37.6
Bachelors degree	134	34.5
Some postgraduate study	19	4.9
Masters degree	49	12.6
Doctoral/Medical degree	6	1.5

## **APPENDIX H: ADDITIONAL INDIVIDUAL DIFFERENCE ANALYSES NOT REPORTED IN THE MAIN TEXT**

This appendix *only* includes analyses of peripheral theoretical interest, that is, were *not* directly relevant to any of the main hypotheses and predictions of my dissertation. Hence, this section is presented for the sake of completeness, to supplement whatever findings were not reported in the main text. Complete statistical analyses are provided in the case of statistically significant effects; otherwise, more brief summaries are provided.

### **Experiment 1**

Before condition assignment, all participants completed a 16-item measure of just world beliefs (Dalbert, 1999,  $\alpha = 0.86$ ). After condition assignment and completion of the main dependent measures, participants completed a series of different individual difference measures. These included a single-item measure of political ideology embedded in the demographic section (1 = Strongly Liberal, 7 = Strongly Conservative), trait anger (Spielberger et al., 1985;  $\alpha = 0.90$ ), the verbal ( $\alpha = 0.74$ ) and physical ( $\alpha = 0.86$ ) subscales of trait aggression (Buss & Perry, 1992), along with the mood monitoring (Eigenvalue = 3.51, Variance Explained = 35.08) and mood labeling subscales (Eigenvalue = 3.00, Variance Explained = 30.03 %) of the mood awareness scale (Swinkels & Giuliano, 1995).

### **Conditional and Correlation Analyses**

Before testing for moderated mediation (see ahead), it was imperative to examine whether these individual difference measures were affected by the experimental condition. Before doing this, and in anticipation for conducting formal moderated mediation, all individual difference measures were standardized. As seen in the table immediately below, none of these individual difference measures were affected by priming condition.

## Mean Differences Across Priming Conditions on Individual Difference Measures,

### Experiment 1

	Control	ISIS	<i>F</i>	<i>p</i>	Cohen's <i>d</i>
Measure					
Political ideology	-0.08 (0.95)	0.09 (1.04)	1.17	> 0.25	0.17
Trait anger	0.05 (1.01)	-0.03 (0.99)	0.20	> 0.25	0.08
Physical aggression	-0.03 (0.97)	0.01 (1.03)	0.05	> 0.25	0.04
Verbal aggression	0.03 (1.01)	-0.02 (0.99)	0.08	> 0.25	0.05
Mood monitoring	0.10 (0.97)	-0.10 (1.03)	1.49	0.23	0.20
Mood labeling	0.01 (0.97)	-0.01 (1.03)	0.18	> 0.25	0.02

Note: Numbers inside parentheses refer to standard deviations.

### Direct Effects of Anger on Individual Differences

With respect to indirect effects, partial correlations were conducted between anger and these indirect measures (after controlling for fear, sadness, and condition assignment). There was a significant correlation between anger and political ideology ( $r = 0.30, p < .001$ ), such that higher scores of anger were correlated with greater support for conservative ideology. This effect was somewhat unexpected, but sensible, given the anger-driven shifts in social conservatism and hawkish attitudes after the priming manipulation.

Two other partial correlations reached significance. First, the correlation between anger and trait physical aggression was statistically significant, such that higher scores on state anger were correlated with higher scores on trait physical aggression ( $r = 0.19, p = 0.02$ ). In addition, there was an inverse correlation between anger and mood monitoring ( $r = -0.17, p = 0.045$ ), such that higher scores on anger were inversely related to the degree to which one monitored their

mood, and vice versa. Beyond these findings, all other correlations were null, all  $r_s =/- 0.05$ , all  $p_s > 0.25$ . Because anger was correlated with various forms of political ideology, moderated mediation analyses were not performed for these particular variables.

### **Moderated Mediation**

For the next set of analyses, I performed moderated mediation analyses with the individual difference measures noted above. More specifically, the priming condition served as the independent measure (X), anger served as the mediating variable (M), and the PCA measure of hawkish attitudes served as the outcome measure (Y). For each analysis, standardized scores for fear and sadness served as covariates. Furthermore, I utilized model 58 of the PROCESS Macro (Hayes, 2013) to conduct all tests of moderated mediation, which examined the moderating role of the individual difference measure on both the “a” path (i.e., condition → anger) and the “b” path (anger → hawkish attitudes). In all cases, 1,000 samples were utilized for bootstrapping, and bias-corrected confidence intervals are reported for the test of indirect effects.

### **Summary of Null Effects**

Belief in a Just World  
Gender  
Trait Anger  
Trait Aggression—Physical  
Trait Aggression—Verbal  
Mood Awareness—Mood Monitoring  
Mood Awareness—Mood Labeling

## **Experiment 2**

### **Individual Difference Measures of Interest**

Before condition assignment, all participants completed a 16-item measure of just world beliefs (Dalbert, 1999,  $\alpha = 0.82$ ). After condition assignment and completion of the main

dependent measures, participants completed a series of different individual difference measures. These included a single-item measure of political ideology embedded in the demographic section (1 = Strongly Liberal, 7 = Strongly Conservative), trait anger (Spielberger et al., 1985; alpha = 0.90), the verbal (alpha = 0.76) and physical (alpha = 0.82) subscales of trait aggression (Buss & Perry, 1992), along with the mood monitoring (Eigenvalue = 3.28, Variance Explained = 32.76%) and mood labeling subscales (Eigenvalue = 2.84, Variance Explained = 28.37 %) of the mood awareness scale (Swinkels & Giuliano, 1995).

### Conditional and Correlation Analyses

Before testing for moderated mediation (see ahead), it was imperative to examine whether these individual difference measures were affected by the experimental condition. Before doing this, and in anticipation for conducting formal moderated mediation, all individual difference measures were standardized. As seen in the table immediately below, none of these individual difference measures were affected by priming condition.

### Mean Differences Across Conditions on Individual Difference Measures, Experiment 2

Measure	Healthcare		<i>F</i>	<i>p</i>	Cohen's <i>d</i>
	Control	Threat			
Political ideology	-0.08 (0.96)	0.06 (1.03)	1.66	0.20	0.14
Trait anger	-0.05 (1.02)	0.05 (0.98)	0.76	> 0.25	0.10
Physical aggression	-0.01 (0.99)	0.00 (1.01)	1.00	> 0.25	0.01
Verbal aggression	0.05 (0.99)	-0.04 (1.01)	0.01	> 0.25	0.09
Mood monitoring	0.03 (0.98)	-0.03 (1.02)	0.25	> 0.25	0.06
Mood labeling	0.08 (1.00)	-0.07 (1.00)	1.75	0.19	0.15

Note: Numbers inside parentheses refer to standard deviations.

### **Partial Correlation of Anger on Individual Difference Measures**

With respect to indirect effects triggered through anger, the inverse correlation between this variable and physical aggression approached, but did not reach, significance ( $r = -0.11$ ,  $p = 0.07$ ). Although these findings are not statistically significant, the direction of these results are completely different from the pattern found in Experiment 1, which found a positive correlation between anger and physical aggression. Beyond this trending effect, there was no evidence of anger inducing greater support for any of these individual difference measures, all  $r_s < +/- 0.08$ , all  $p_s > 0.17$ .

### **Moderated Mediation**

For the next set of analyses, I performed moderated mediation analyses with the individual difference measures noted above. More specifically, the priming condition served as the independent measure (X), anger served as the mediating variable (M), and the PCA measure of healthcare attitudes served as the outcome measure (Y). For each analysis, a standardized score for fear served as a covariate. Furthermore, I utilized model 58 of the PROCESS Macro (Hayes, 2013) to conduct all tests of moderated mediation, which examined the moderating role of the individual difference measure on both the “a” path (i.e., condition → anger) and the “b” path (anger → healthcare attitudes). In all cases, 1,000 samples were utilized for bootstrapping, and bias-corrected confidence intervals are reported for the test of indirect effects.

### **Summary of Null Effects**

Gender

Trait Anger

Trait Aggression—Physical

Trait Aggression—Verbal

Mood Awareness—Mood Monitoring

Mood Awareness—Mood Labeling

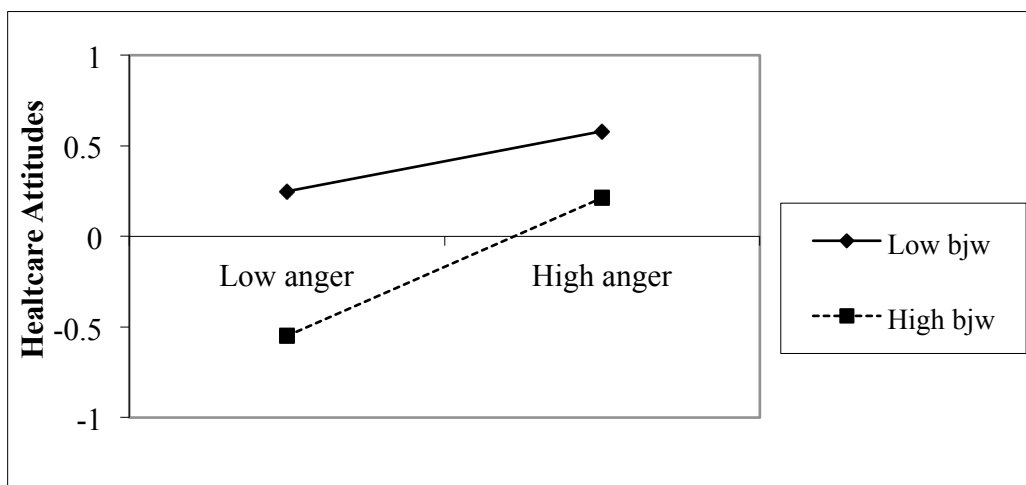


## Statistically Significant Effects

### Just World Beliefs

Examining the pathway between priming condition and anger revealed no interaction between priming condition and just world beliefs,  $b = -0.06$ ,  $se = 0.07$ ,  $t = -0.98$ ,  $p > 0.25$ . Furthermore, there was a main effect for priming condition on anger,  $b = 1.08$ ,  $se = 0.08$ ,  $t = 13.95$ ,  $p < 0.001$ , but no main effect for just world beliefs on anger,  $b = 0.01$ ,  $se = 0.05$ ,  $t = 0.19$ ,  $p > 0.25$ . Examining the pathway between anger and military attitudes revealed an interaction between anger and just world beliefs on healthcare attitudes,  $b = 0.11$ ,  $se = 0.05$ ,  $t = 2.27$ ,  $p = 0.02$ . Furthermore, there were main effects for both anger,  $b = 0.27$ ,  $se = 0.09$ ,  $t = 2.89$ ,  $p = .004$ , and just world beliefs on support for healthcare attitudes,  $b = -0.29$ ,  $se = 0.05$ ,  $t = -5.33$ ,  $p < .001$ . A plotting of the interaction, using recommendations by Aiken and West (1991) reveals that those high in just world beliefs (+1 *SD*) seem to use their anger to a greater extent than those low on this measure (-1 *SD*).

### Moderation Analyses of Just World Beliefs on Healthcare Attitudes, Experiment 2



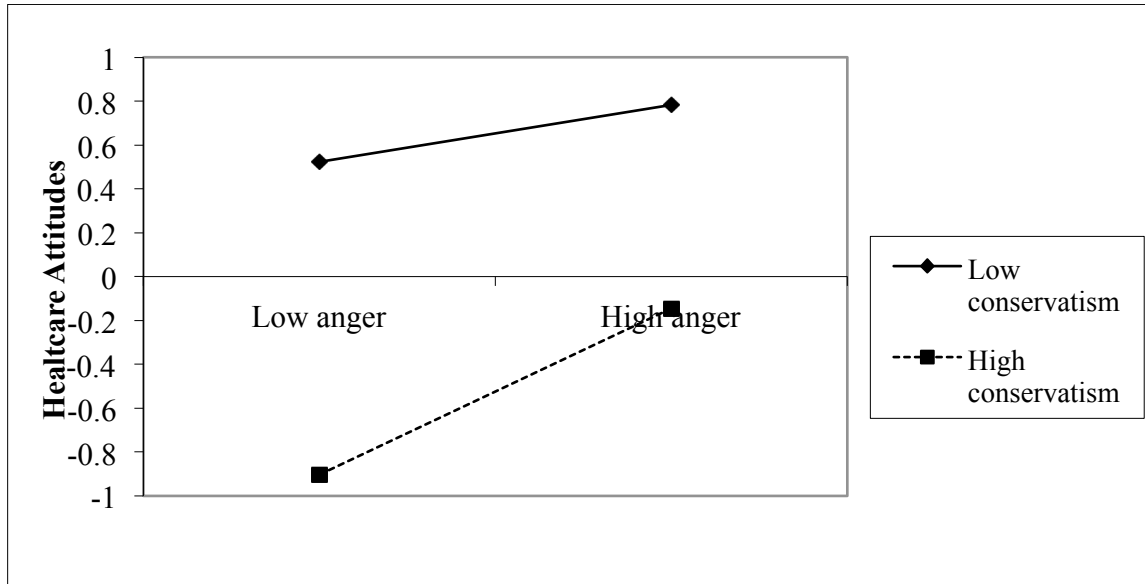
I next examined the indirect effects between those high, low, and at the mean for just world beliefs, to see if these effects differed by levels of just world beliefs. Analyses indicated that the indirect effects for those high,  $b = 0.39$ ,  $se = 0.12$ , 95% CI (0.15/0.61), and at the mean,  $b = 0.30$ ,  $se = 0.10$ , 95% CI (0.10/0.49) used their anger to endorse healthcare attitudes, whereas the pattern of results for those low on this scale did not show evidence of mediation,  $b = 0.19$ ,  $se = 0.12$ , 95% CI (-0.04/0.43).

### **Political Ideology**

I next turned to the examination of political ideology as a moderator of the relationship between priming condition and anger. Contrary to Experiment 1, there was no hint of an interaction between priming condition and political ideology on levels of anger,  $b = 0.04$ ,  $se = 0.07$ ,  $t = 0.54$ ,  $p > 0.25$ . Furthermore, the main effect for priming condition was significant,  $b = 1.08$ ,  $se = 0.08$ ,  $t = 13.87$ ,  $p < .001$ , whereas the main effect for political ideology was null,  $b = -0.04$ ,  $se = 0.05$ ,  $t = -0.75$ ,  $p > 0.25$ .

I next examined whether political ideology moderated the relationship between anger and support for healthcare attitudes. In this case, there was a significant interaction,  $b = 0.12$ ,  $se = 0.04$ ,  $t = 2.85$ ,  $p = .004$ . In addition, there were main effects for both anger,  $b = 0.25$ ,  $se = 0.08$ ,  $t = 3.19$ ,  $p = 0.002$ , and political ideology,  $b = -0.59$ ,  $se = 0.05$ ,  $t = -12.80$ ,  $p < .001$  on healthcare attitudes. To plot this interaction, I plotted the effects for those low (-1 *SD*) and high (+1 *SD*) in conservative ideology. The finding from this plot are straightforward. Conservatives used their anger to a greater extent to shape support for healthcare attitudes. In contrast, liberals, who already had high levels of support for healthcare, did not show an increased boost in support based on their level of anger

## Moderation Analyses of Political Ideology on Healthcare Attitudes, Experiment 2



I next examined the indirect effects between those high, low, and at the mean for political ideology, to see if these mediation effects differed by ideology. Analyses indicated the indirect effects for those high,  $b = 0.42$ ,  $se = 0.12$ , 95% CI (0.21/0.67), and at the mean,  $b = 0.27$ ,  $se = 0.11$ , 95% CI (0.09/0.49) used their anger to endorse healthcare attitudes, whereas the pattern of results for those low on this scale did not show evidence of mediation,  $b = 0.14$ ,  $se = 0.11$ , 95% CI (-0.07/0.38).

## Experiment 3

### Individual Difference Measures of Interest

Before condition assignment, all participants completed a 16-item measure of just world beliefs (Dalbert, 1999,  $\alpha = 0.85$ ). After condition assignment and completion of the main dependent measures, participants completed a series of different individual difference measures. These included a single-item measure of political ideology embedded in the demographic section

(1 = Strongly Liberal, 7 = Strongly Conservative), the Berkeley Expressivity Questionnaire (Gross & John, 1995; alpha = 0.89), the simplified Affect Intensity Measure (Larsen, 1984; 2009; alpha = 0.62), the short form version of Right Wing Authoritarianism (Altemeyer, 1988; Zakrisson, 2005, alpha = 0.89), the dominance (alpha = 0.75) and anti-egalitarianism (alpha = 0.810 subscales of the SDO<sub>7</sub> (Ho et al., 2015; see also Pratto, Sidanius, Stallworth, & Malle, 1994), along with the mood monitoring (Eigenvalue = 3.55, Variance Explained = 35.52) and mood labeling subscales (Eigenvalue = 2.86, Variance Explained = 28.64 %) of the mood awareness scale (Swinkels & Giuliano, 1995).

### **Conditional and Correlation Analyses**

Before testing for moderated mediation (see ahead), it was imperative to examine whether these individual difference measures were affected by the experimental condition. Before doing this, and in anticipation for conducting formal moderated mediation, all individual difference measures were standardized. As seen in the table immediately below, none of these individual difference measures were affected by priming condition

## Mean Differences Across Priming Conditions on Individual Difference Measures,

### Experiment 3

	Control	Healthcare Threat	Terrorist Threat
Measure			
Political ideology	0.07 (1.01)	0.07 (1.01)	-0.13 (0.98)
Berkeley expressivity questionnaire	-0.11 (0.97)	0.06 (0.90)	0.12 (0.99)
Affect intensity	-0.11 (1.08)	0.06 (0.90)	0.05 (1.10)
Right-wing authoritarianism	-0.02 (0.98)	0.07 (1.04)	-0.04 (0.98)
Social dominance— dominance	-0.06 (0.90)	0.11 (1.05)	-0.04 (1.04)
Social dominance—anti- egalitarianism	0.04 (0.92)	-0.07 (1.01)	0.03 (1.06)
Mood monitoring	-0.09 (1.02)	0.05 (0.97)	0.03 (1.02)
Mood labeling	-0.14 (1.06)	0.03 (0.91)	0.10 (1.02)

Note: Numbers inside parentheses refer to standard deviations.

### Partial Correlation Analyses, Controlling for Condition Assignment

To maintain consistency with Experiments 1 and 2, I conducted a series of correlation analyses, examining the effects of anger on these individual difference measures. This included a partial correlation with participants in the terrorist threat versus control contrast (to maintain consistency with Experiment 1) and the healthcare threat versus control contrast (Experiment 2).

Consistent with primary analyses, the first contrast also controlled for fear and sadness, whereas the second contrast controlled for fear.

With respect to the ISIS versus Control contrast, anger was significantly correlated with political ideology ( $r = 0.18, p = 0.004$ ), right-wing authoritarianism ( $r = 0.21, p = 0.001$ ), and the dominance ( $r = 0.19, p = 0.003$ ) and anti-egalitarianism subscales ( $r = 0.17, p = 0.01$ ) of social dominance orientation. Furthermore, anger was not significantly correlated with the affect intensity measure ( $r = 0.11, p = 0.09$ ) and the mood labeling factor ( $r = 0.11, p = 0.09$ ) of the mood awareness scale. No other correlations approached significance, all  $r$ s  $\pm 0.07$ , all  $p$ s  $> 0.25$ ). Because anger was correlated with various forms of political ideology, moderated mediation analyses were not performed for these particular variables.

With respect to the healthcare versus control contrast, the correlation between anger and the mood monitoring factor of the mood awareness scale approached significance ( $r = -0.12, p = 0.07$ ). No other correlations approached significance, all  $r$ s  $\pm 0.08$ , all  $p$ s  $> 0.19$ .

### **Moderated Mediation**

For the next set of analyses, I performed moderated mediation analyses with the individual difference measures noted above. The first set of analyses included the ISIS versus Control Contrast as the independent variable (X), anger served as the mediating variable (M), and the military attitudes index served as the outcome measure (Y). For each analysis, standardized scores for fear and sadness served as a covariate. The second set of analyses included the healthcare threat versus control contrast as the independent variable (X), anger served as the mediating variable (M), and the health attitudes index served as the outcome measure. For each analysis, a standardized score for fear served as a covariate.

In all cases, I utilized model 58 of the PROCESS Macro (Hayes, 2013) to conduct all tests of moderated mediation, which examined the moderating role of the individual difference measure on both the “a” path (i.e., condition→anger) and the “b” path (anger→ relevant attitudes). In all cases, 1,000 samples were utilized for bootstrapping, and bias-corrected confidence intervals are reported for the test of indirect effects.

**Summary of Null Effects for terrorist threat versus control contrast**

Gender  
Mood Awareness—Mood Monitoring  
Mood Awareness—Mood Labeling  
Berkeley Expressivity Questionnaire  
Affect Intensity Measure  
Belief in a Just World

**Summary of Null Effects for healthcare threat versus control contrast**

Gender  
Political Orientation  
Mood Awareness—Mood Monitoring  
Mood Awareness—Mood Labeling  
Berkeley Expressivity Questionnaire  
Affect Intensity Measure  
Social Dominance—Dominance  
Social Dominance—Anti-Egalitarianism  
Right Wing Authoritarianism  
Belief in a Just World