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Abstract

Analysts make competing claims about when and how politicians use fear to gain support for suboptimal policies. Using a model, we clarify how common attributes of fear affect politicians' abilities to achieve outcomes that are bad for voters. In it, a politician can provide information about a threat. His statement need not be true. How citizens respond differs from most game-theoretic models – we proceed from more dynamic (and realistic) assumptions about how citizens react to fear. Our conclusions counter popular claims about how easily politicians use fear to manipulate citizens; yield different policy advice than does recent counterterrorism scholarship; and highlight issues (abstract, distant) and leaders (secretive) for which recent findings by political psychologists and public opinion scholars will – and will not – generalize.

"The whole aim of practical politics is to keep the populace alarmed (and hence clamorous to be led to safety) by menacing it with an endless series of hobgoblins, all of them imaginary."

H.L. Mencken, *In Defense of Women*, 1920

"Terrorism, after all, is the ultimate misuse of fear for political ends. Indeed, its specific goal is to distort the political reality of a nation by creating fear in the general population that is hugely disproportionate to the actual danger the terrorists are capable of posing."

Al Gore about President Bush, February 5, 2004

"John F. Kerry and his supporters are … playing on the public's security fears and sometimes using incendiary charges to stoke them."

Washington Post, September 29, 2004

"[He] seeks to roll back the democratic progress of the past two decades by playing to fear, pitting neighbor against neighbor and blaming others for their own failures to provide for the people."

George W. Bush about Hugo Chavez. November 5, 2005

Many people believe that politicians use fear to manipulate the public. Of particular concern are politicians who stoke unwarranted fear for personal gain. Numerous critics accused the G.W. Bush administration of using fear of terrorism to scare citizens into supporting a range of policies. A broader view reveals that such claims are widespread and are directed at many political figures.

When can politicians use unwarranted fear signals to obtain support for policies that are bad for voters? Many observers presume that politicians, by virtue of their office and their privileged access to information, can do so whenever they wish. But such claims ignore several important aspects of the strategic calculations that politicians make.

We examine how fear-based attributes of citizen responses constrain political leaders. We work from the premise that the inferential power of game theory can clarify the political relevance of such fear in ways that studies focusing exclusively on fear or strategic behavior cannot. In so doing, we build upon both theoretical research on the role of public opinion in counterterrorism policy and empirical research on politics and emotions.

Theoretical work (see, e.g., Bueno de Mesquita 2006) examines how government decisions about how much, and what kind of, effort to devote to counterterrorism. It is an important advance in many respects. Its conclusions reveal forces that can limit the kinds of opportunistic political behavior described above. But its findings depend on two key assumptions: that voters know a great deal about what government does and that they use this knowledge in very particular ways. The work does not examine what happens when fear-related parameters change how citizens think. This matters because ample evidence suggests that the two key assumptions are not true, which, in turn, raises concerns about the effectiveness of the work's policy recommendations. To clarify how such recommendations work under more realistic conditions, models with more attention to citizen psychology is needed.

The emotions and politics literature, by contrast, is largely empirical (see reviews in McDermott (2006) and Brader (2006)). It accumulates evidence on how citizens feel about political actors and events. Most studies do not address questions of elite manipulation. These studies are also contextually-bound. Empirical researchers tend to select for study reactions to politicians and events that they suspect have caused emotional reactions. Without greater attention to how incentives and strategy moderate the political impact of fear, it is difficult to know whether effects of fear observed in any one of these studies are relevant in other contexts.

But a game theoretic approach? To some, the notion contradicts the long-standing Cartesian postulate that emotion and reason are separate cognitive functions. Perhaps game theory -- with its focus on incentives, strategic decision making, and goal-oriented learning – is unsuitable for clarifying emotional aspects of politics. This is what Elster (2000: 692) argues:

"The social sciences today, however, cannot offer a formal model of the interaction between rational and non-rational concerns that would allow us to deduce specific implications for behavior. As mentioned earlier, the idea of modeling emotions … is bejune and superficial. The fact that emotion can cloud thinking to the detriment of an agent's interests is enough to refute this idea."

There is much to disagree with in this claim, such as the notion that emotions always impair decision quality (Marcus, et. al. 2000) and the tendency to confound game theory as a method with narrow rationality notions (Lupia, McCubbins, and Popkin 2000). But we contend that integrating even a few insights from the empirical study of fear with the analytic advantages of game theory can clarify important elements of the relationship between politicians and citizens.

Still, the question remains, "How?" Following Witte (1992), we treat fear as a "negatively-valenced emotion, accompanied by a high-level of arousal, and elicited by a threat that is perceived to be significant and personally relevant." Treated as such, fear has subconscious aspects that are beyond the purview of strategic decision-making. But there is more to fear than what happens at the subconscious level. Examinations at the neural substrate level reveal an important connection between emotional responses and goal-oriented learning. As Kandel, Schwartz, and Jessell (1995:610, emphasis added) describe:

"[T]he amygdala is required for the conditioning of an organism to the environment (or context) in which it lives. The survival of an organism depends on behaviors that maximize contact with biologically safe environments and minimize contact with dangerous environments. Many of these dangers *are subject to modification through experience*."

In other words, the conditions under which many social phenomena will induce, or be affected by, fear are a function of modification. Modification, in turn, can be affected by incentives. As game theory clarifies how incentives and strategies affect behaviors and outcomes in other contexts, we contend that it can also clarify the effect of fear in politics.

To this end, we develop a model to address the question – when can politicians scare people into supporting policies that are bad for them? The model features two players, a strategic politician and a citizen who is not entirely strategic, in a two-period game. In the first period, a politician has private information about the presence (or absence) of a threat. He can make a public statement about the threat level -- but it need not be true. How we model the citizen's response differs from most game theoretic models. The differences follow from five well-established attributes of fear. One implication of these attributes is that the citizen's initial response is beyond conscious control. We treat it as automatic. Later in the period, and if the citizen receives a certain kind of feedback about her initial response, she may attempt to inhibit similar reactions in the future in a manner that is strategic – at least in part. In the second period, the politician receives new information about a threat and can speak once again. Depending on the feedback properties and inhibitory mechanics of the first period, the citizen may react differently to a second period fear appeal by the politician.

We use the model to derive an *equilibrium of fear*. It clarifies how choices and outcomes are affected by variations in the politician's current needs, how he thinks about the future, what the citizen believes about current and future threats, what feedback the citizen will receive about these threats, and the extent to which she can learn to moderate her fearful response in the second period. This result shows that the political impact of fear is a consequence of how the politician's strategic desires *interact with* key attributes of the citizen's psychology. Our findings reveal mass psychological constraints on political power that are absent in popular claims about how easily politicians use fear to manipulate voters. At the same time, because our findings are based on more realistic assumptions about what citizens know than is recent counterterrorism scholarship, we will show that they suggest different strategies for countering the manipulative use of fear.

The article continues as follows. First, we describe the five empirical premises that guide how we model citizen responses to fear appeals. Then, we present the model, derive results, describe their substantive implications, and relate our findings to existing theoretical and empirical work. A brief appendix contains additional mathematics.

A Foundation for Modeling Fear in Politics

We are interested in clarifying when politicians can scare voters into supporting suboptimal policies. To do so, we offer a model that allows a politician to act strategically and permits citizens to adapt in a partially-strategic manner. The manner in which we characterize the citizen is motivated by our reading of literatures on emotional decision making in psychology and related fields. Researchers in these fields have not reached a consensus about many aspects of how fear affects decisions.[1] Yet, there exist common and widely-replicated findings from these literatures that are not only relevant to the substantive question at hand, but also possible to integrate into a formal model. That said, ours is not a comprehensive formal model of emotional decision making. Rather, it is an attempt to build a clear and accessible bridge between currently disparate theoretical and empirical literatures in a way that contributes insight to a broader range of endeavors.

With such goals and caveats in hand, we now present the premises. Our model differs from other game theoretic treatments of politician-citizen interaction in that it builds from five premises about fear. Each premise has broad scholarly support and its main implications have proven robust to focal challenges.

1. *The initial response to a threatening stimulus is automatic.*

Many studies document such automaticity. As LeDoux (1996: 128) describes:

[1] One point on which there is no consensus is on the relationship between fear and anxiety. Some scholars simply equate the two factors while others draw a range of distinctions. Here, we focus on fear because we prefer the clarity of a single term and because extant definitions of fear are subject to less variance than extant definitions of anxiety.

> [The fear system] detects danger and produces responses that maximize the probability of surviving a dangerous situation in the most beneficial way…Although we can become conscious of the defense system, especially when it leads to behavioral expressions, the system operates independently of consciousness—it is part of what we called the emotional unconscious…"

In an initial encounter with a threatening stimulus, we have minimal control over the onset of fear, particularly when our ability to counter the threat is low (Witte 1992). The same idea is recognized in recent work that examines fear and violence as political weapons. As Kalyvas (2004: 103) notes, politically-motivated attempts to induce fear "produce, initially at least, a paralyzing, turbulent, irrational fear, scarcely permitting any thought…." Referencing an example of German terror in Greece by Skouras, et. al. (1947), he continues, "most people were paralyzed by the daily expectation of an "unpredictable and unknown misfortune.""

2. *An initially fearful response can induce subsequent information processing.*

We assume that fear may drive subsequent attention towards objects that would otherwise receive non-thinking responses. In this sense, we follow Kandel, et. al. (1995: 608) who state that "direct thalamic input may mediate short-latency, primitive emotional responses and prepare the amygdala for the reception of more sophisticated information from higher centers, such as the ventromedial prefrontal cortex." Indeed, the stimulus may activate their attention and induce goal-oriented cognitive processes that we can model (Phelps 2006).

3. *Preferences and incentives affect the extinction of fear responses.*

Extinguishing a fear can be a long and difficult process. Even eliminating common fears such as heights and spiders can require extensive professional therapy. This difficulty is partly explained by the physical process involved in extinguishing an existing fear. Instead of eliminating the fear-inducing connection between an unconditional stimulus (US – e.g., an electric shock) and a conditional stimulus (CS – e.g., a bell)[2], successful extinction processes create a second, inhibitory connection (i.e., a second sound) between the CS and the US (Davis and Myers 2002:1000).[3] However, while emphasizing the difficult nature of extinction, LeDoux (1996: 145) reminds us that "repeated exposure to the CS in the absence of the US can lead to extinction." But adaptability varies by situation. Variations in a person's experience and in the availability of the feedback mentioned in the next premise can affect whether an attempt to inhibit a fear will be seen as worthwhile, in terms of future benefits, or likely to succeed.

4. Feedback is necessary to extinguish old fears.

Extinguishing a fear requires establishing a new link between the unconditional stimulus and the conditional stimulus. In other words, the conditional stimulus must provide, or seem to provide, information about the unconditional stimulus (Leahey and Harris 2001). In a political context, where the implications of actions taken today need not be realized for years or decades (perhaps even centuries with respect to environmental policies offered to inhibit climate change) it is easy to imagine situations where a conditional stimulus has little effect. In our model, the availability of such information and factors affecting perceptions about the efficacy of inhibition attempts will be key variables.

5. Activation of the fear system in response to future stimuli can be adjusted.

The idea that fear reactions can change follows from many findings, such as Damasio (1994: 177-179):

> "[M]ost somatic markers we use for rational decision-making probably were created in our brains during the process of education and socialization, by connecting specific classes of stimuli with specific classes of somatic state…Somatic markers are thus acquired by experience, under the control of an internal preference system and under the influence of an external set of

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[2] If the bell is sounded immediately before shocks are administered, then, later, the bell itself can elicit a proportion of the shock's emotional response. Even if the shock is not administered, the bell induces fear.

[3] The process leaves open the possibility that an extinguished fear can re-emerge in a different context unabated (see for example Bouton and Bolles 1979).

circumstances which include not only entities and events with which the organism must interact, but also social conventions and ethical rules."[4]

Just as fear itself can beneficial for making rapid decisions, refining perceptions about what stimuli are worth fearing can also be valuable. As Cacioppo and Gardner (1991: 199) note, "an additional adaptive advantage is conferred to species whose individual members have the capacity to learn based on the unique environmental contingencies to which they are exposed, to represent and predict events in their environment, to manipulate and plan based on representations, and to exert some control over their attentional and cognitive resources."

The Model

Our model features two players and two periods. The two players are a politician and a citizen, where the latter may also be thought of as representing a larger group of citizens who share interests and perceptions. While the politician is fully strategic, the citizen is only partially so. It is a game of asymmetric information, where the politician has private information about a potential threat. In each period, the politician must decide whether or not to make a statement about the threat level. The statement need not be true. Unlike many other games of asymmetric information, the citizen's initial reaction to this statement is automatic. Though the citizen benefits if her initial reaction is consistent with the true status of the threat, her ability to act strategically comes later in the period and only if she receives sufficient feedback. So while the model has a communicative element, in that the politician sends a message to the citizen, it is not a signaling (Spence 1973) or cheap talk model (Crawford and Sobel 1982) in the traditional sense (see Banks 1990 for a review). In particular, we do not assume that the voter engages in Bayesian updating. Put another way, our assumptions about voter perceptions and reactions follow from the five premises listed above.

[4] The term "somatic" refers to the body and "somatic state" refers to a condition of the body. "When the bad outcome connected with a given response option comes into mind, however fleetingly, you experience an unpleasant gut feeling. Because the feeling is about the body, I gave the phenomenon the technical term *somatic* state" Damasio (1994: 173, emphasis in original).

We now turn to a more precise definition of the game. Figure 1 depicts the timeline of events that characterizes the politician-citizen interaction. Figures 2 and 3 depict the game's extensive form. In other words, figures 2 and 3 present a more detailed version of the relationship between events in the timeline of Figure 1. While it is possible to expand the model in many respects, this version presented here *is the simplest way* to address the question, "When can politicians scare citizens into supporting policies that are bad for them?" Except where noted, all aspects of the game are common knowledge.

[Figures 1-3 about here.]

The game begins with the determination of the state of the world (the unconditional stimulus) for period 1, $S_1=\{1,0\}$. $S_1=1$ denotes a state in which the citizen should react fearfully (i.e., a bad thing is happening). If $S_1=0$, there is no rationale for a fearful response.

The politician observes the true state of the world. The citizen does not. The citizen does, however, have a baseline expectation. She knows that S_1 is determined by a single draw from a distribution that yields $S_1=1$ with probability $s \in [0,1]$ and $S_1=0$ with probability $1\text{-}s$. So, absent any additional information, the citizen believes that a bad thing is happening with probability s.

The politician makes the game's first strategic move. He chooses whether or not to send a message, $M_1 \in \{0,1\}$, to the citizen. $M_1=1$ is the conditional stimulus. Its content is that "it is the state of the world in which you should react fearfully." $M_1=0$ is the absence of such a message.

The politician need not speak the truth. He can send a fear signal ($M_1=1$) when reality does not justify it ($S_1=0$), or vice versa. We assume that sending an untrue signal is costly to the politician. This cost represents the risk that the politician perceives to his reputation (from actors not included in this game) as well as the extra effort that the politician may have to devote to getting others to go along with his deception. We denote this exogenous cost of $M_1 \neq S_1$ as the variable $k_P>0$.

Next, the citizen supports the politician or she does not $(R_1 \in \{0,1\})$. $R_1=1$ denotes her support for the candidate in a setting that matters to him (such as a meaningful public forum, an election, or a poll). $R_1=0$ denotes her disapproval.

Following premises 1 and 2, we assume that the citizen's initial reaction is automatic. She treats the fear signal $M_1=1$ as sufficient evidence that the fearful state of the world is at hand $(S_1=1)$ and supports the politician. This premise also echoes a strong theme in studies of how violence affects citizen-politician relations. For example, Kalyvas (2004:104), himself following White (1989: 328) argues that

"As long as the victims have no way to react against such violence, its effect is 'to increase compliance with authority among those who feel they may be threatened.' In other words, the population may be pushed into total passivity and political abdication."

The citizen's period 1 utility, V_1, from her response, R_1, depends on how her initial reaction corresponds to reality, S_1. If $S_1=R_1$, then $V_1=x_1>0$. Otherwise, $V_1=0$. In other words, the politician's policies are better for the citizen if the "bad thing" represented by $S_1=1$ occurs. Absent the "bad thing," the citizen is worse off by supporting his policy ($R_1=0$).

There are at least two alternative ways of thinking about this correspondence between the citizen's reaction, her utility, and policy. For example, one can think of $R_1=1$ as representing the citizen's willingness to grant continuing support to the politician to pursue his preferred policies in the policy domain to which S_1 applies and $R_1=0$ as representing the citizen withholding such support. With this frame, the game addresses when the politician can use fear to scare citizens into approving suboptimal policies. Alternatively, one could think of $R_1=1$ as the citizen supporting a politician's *inaction*. With this frame, the politician tries to scare citizens about the consequences of change that he opposes. This version of the game would clarify when voters can be frightened into supporting a status quo even though they want change if they had the politician's private information. Since inaction itself is a policy choice, the model can clarify when the politician can use fear to get what he wants, whether he wants action or inaction.

Continuing with the citizen, recall that $M_1=0$ denotes the absence of a fear signal. In this case there is no stimulus. There is nothing new for the citizen to think about. Hence, her support for the politician follows automatically from her baseline expectation, s, and her utility function: she approves of the politician's policies if $V_1(R_1=1|M_1=0, s)=sx_1> V_1(R_1=0|M_1=0, s)=(1-s)x_1$ (i.e., if $s \geq .5$) and disapproves otherwise.[5]

The politician, in turn, values citizen support -- though how much he values it is a variable. Let U_1 denote his period 1 utility. If the citizen supports his policy $(R_1=1)$, the politician earns $U_1(R_1=1)=c_1>0$. If $R_1=0$, he earns nothing $(U_1(R_1=0)=0)$. So the higher is c_1, the more he values citizen support.[6]

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[5] Huddy et. al. (2005) document reactions to antiterrorism policies after the 9/11 attacks. A key hypothesis is that anxiety reduces support for antiterrorism policies. Since they equate fear and anxiety (2005: 595; fn 1), their hypothesis contradicts our assumption about the citizen's initial reaction – though the difference in our approaches is limited. We accept their core premises (2005: 595): cognitive functioning is impaired by high anxiety, anxious individuals tend to perceive more risk, and anxious individuals will have a preference for less risky options. Their hypothesis regarding anxiety is that it will undercut support for antiterror policies that are seen as personally dangerous but that anxiety will not reduce support for policies directed against enemies. The latter part of their hypothesis parallels our treatment. The difference lies in the first part of the Huddy et. al. hypothesis, which treats the personal risk associated with a policy as something that occurs in isolation of other risks. We proceed as if there are also risks entailed in a government's failure to respond. Our approach allows risk-averse citizens to be motivated by anxiety about inaction and treats them as more likely to support government action in the initial period after fear-provoking information becomes available. Huddy et. al. (2005: 596, emphasis added) later report that "anxiety reduces support for *any* retaliatory policies that could jeopardize American security." However, we do not read their results as constituting strong evidence against our notion that if there exists a threat for which individuals perceive themselves to have low personal efficacy (Witte 1992), then citizens will initially support governmental reactions. The reason is that Huddy et. al. queried respondents about their anxiety about the U.S. response, but not about anxiety they would experience if the U.S. chose not to respond. So it is difficult to tell whether government action or inaction would cause greater anxiety.

[6] As to why a politician would care about citizen support there are multiple explanations. In parliamentary governments, public confidence in the governing coalition is carefully tracked. Low public support can

We now turn to the ways in which the first period can end. Following premises 3-5, we assume that the citizen may have an opportunity to rethink her initial response to the politician's fear appeal. Specifically, if the politician sent a fear signal, then Nature (i.e., factors and actors outside of the model) may provide feedback to the citizen, $T \in \{S_1, \varnothing\}$. With probability $t \in (0,1)$, this feedback reveals the true state of the world, $T=S_1$. With probability $1-t$ if a fear signal was sent (or with probability 1 if no fear signal was sent), Nature reveals nothing, $T=\varnothing$. From the politician's perspective, this assumption implies that higher values of t represent cases where the citizen is increasingly likely to learn if he sent a false fear signal. Following premises 3-5, we assume that $T=\varnothing$ provides insufficient feedback for the citizen to rethink her previous reaction and, as a result, ends the period.

If the citizen receives feedback, $T=S_1$, the first period continues. The feedback reveals the utility consequence of her initial reaction, R_1. If $T=R_1=S_1$, she learns that her emotional response was satisfactory. We assume that this situation gives her no motive for thinking about the matter further and, as above, ends the period. This assumption echoes research (Brader 2006:85) that finds "substantial evidence of reliance on heuristics and the 'peripheral processing" of information when people are in happy or positive mood states."

If, however, the citizen learns that her initial fearful response was unwarranted ($S_1=0$ and $R_1=1$), then she makes the period's final move. She next decides whether to invest the time and effort necessary to attempt to extinguish similar responses in the future. Following premise 3, extinction can be a difficult process, requiring "the establishment of an inhibitory connection

substantially weaken a government and, under certain conditions, even topple it (Lupia and Strom 1995). In the U.S. case, several presidents have argued that they do not base their policies on the polls. If we take them at their word, public opinion still matters, because members of the House and Senate also face electoral pressures. If a policy is sufficiently unpopular, it can become harder for a president to achieve policy objectives (Kernell 1986). As a result, even a president whose own motives are relatively isolated from reelection pressures must be sensitive to variations in public support if he or she wants Congress to act on his or her policy agenda.

between the CS and the US." (Davis and Myers 2002:1000).[7] We model this choice as a strategic (i.e., goal oriented) inhibition investment decision, $I \in \{0, 1\}$. $I=1$ denotes a decision to pay cost $k_V>0$ in an attempt to inhibit a fear response in the game's second period (e.g., self-administered or professional therapy). $I=0$ denotes the decision not to rethink her previous response (i.e., no therapy).

Again following from premise 3, we treat the consequence of an inhibition attempt as if it is only partially under the citizen's control. To offer a precise definition of such inhibitory mechanics, we first describe the extensive form of the second period, where inhibition – if successful – will have an impact. Then, we return to the topic of inhibition using details about period 2 to fill out the mechanics.

At the beginning of Period 2, the true state of the world, $S_2=\{1,0\}$, is revealed to the politician, where S_2 is defined analogously to S_1. As before, it is common knowledge only the politician directly observes the true value of S_2 and that $S_2=1$ with probability s. Then, the politician chooses whether or not to send a fear signal, $M_2 \in \{0,1\}$, where the meaning and costs attributable to his strategy are as defined in period 1. Next, the citizen supports the politician's policies or does not, where $R_2 \in \{0,1\}$ is defined as before. The utility consequences of such actions, U_2 and V_2, are analogous to those in Period 1, with the exception that c_1, the politician's first period payoff if the citizen supports him, need not equal c_2, his second period benefit from the citizen's support. Similarly, the citizen's reward for responding in a manner that is consistent with the true state of the world need not be identical across periods (x_1 need not equal x_2). As before, all payoffs just named are presumed to be greater than 0. The utility consequence for the

[7] In this sense, our representation of the citizen reflects the "two systems" approach to emotional decision making articulated by Sloman (1996). The first system is automatic and affective. The second system is controlled and deliberative. The second system can regulate the first, but does not always do so. Over time, decisions and reactions are seen as a joint product of both systems.

politician of failing to receive the citizen's report ($R_2=0$) and for the citizen of failing to act in accordance with the true state of the world ($R_2 \neq S_2$) for the citizen remain zero.

We now return to the inhibition mechanics. When the citizen chooses $I=1$, she learns to ignore the politician's second period message with probability $z \in [0,1]$, where z is exogenous. This means that the citizen will treat the message $M_2=1$ as if it were $M_2=0$. In this case, she will respond as if the politician says nothing; her support will be driven entirely by her baseline expectation, s). We denote this inhibitory outcome as $F=0$ (i.e., no fear). With probability $1-z$, her inhibition attempt fails and she will again react fearfully to the politician's message. We denote this outcome as $F=1$ (i.e., the potential for a fearful response by the citizen in period 2 is as it was in period 1). High values of z denote cases where players expect the citizen to inhibit successfully. Low values of z represent cases where the players expect that the citizen can do little to adapt to what she has learned -- even if she tries. To reiterate, the fear factor, F, equals 1 if any of the following is true:

- There was no period 1 fear signal ($M_1=0$) and she had no reason to rethink her response.
- She observed a fear signal but did not receive feedback about it ($M_1=1$ and $T=\varnothing$).
- She received feedback and learned that reacting fearfully was appropriate ($M_1=1$ and $T=S_1$ and $S_1=R_1$).
- She learned that her fearful response reduced her utility but she chose not to invest in inhibition ($M_1=1$ and $T=S_1$ and $S_1 \neq R_1$ and $I=0$).
- She invested in inhibition but the attempt was unsuccessful (an outcome that occurs with probability $1-z$ if $M_1=1$ and $T=S_1$ and $S_1 \neq R_1$ and $I=1$).

So, unlike the first period, the citizen's second period response is not always activated upon observing $M_2=1$. If $F=1$, then she reacts as before: $M_2=1$ induces $R_2=1$. If $F=0$, then she suppresses that reaction because she has learned to override her fear response with her baseline expectation (i.e., she responds as if $M_2=1$ implies $M_2=0$).

Thereafter, the game ends. Utility functions for the game are as follows.

- The politician receives positive utility in each period only if he earns the citizen's approval and pays a cost only if he sends a false signal. Therefore, $U=U_1+U_2=R_1c_1+R_2c_2-|M_1-S_1|k_P-|M_2-S_2|k_P$.

- The citizen's utility, V, comes from responding in a way that is consistent with the true state of the world and she pays a cost only if she attempts to inhibit. Therefore, $V=V_1+V_2=(1-|R_1-S_1|)x_1-(I*k_V)+(1-|R_2-S_2|)x_2$.

To complete the definition of the model, we state a tie-breaking rule for cases in which more than one action provides equal expected utility to a player. We assume that if sending a fear signal and sending no signal provide the politician with equal expected utilities, then $M_1=0$. Our motivation for this rule is that sending a fear-based message requires effort that the politician will not expend unless he expects a positive return. Similarly, we assume that an indifferent citizen chooses not to invest in inhibition, $I=0$.[8]

Results

In this section, we present the model's equilibrium. Then, we use it to answer the question "When can politicians scare citizens into supporting bad policies?" The subgame perfect equilibrium concept is our inferential standard. A set of strategies qualifies as such only if it maximizes expected utility at every decision node in the game. Since the citizen's initial reactions to the politician's messages are automatic, they are not included in this definition. A

[8] While the five premises detailed above are the motivational source for our representation of citizens, what we call emotional parameters can be called other things. For example, a non-emotional voter observes a political statement, observes the true state of the world with probability T sometime after hearing the statement, and then decides whether or not to speak out or otherwise withdraw support for the politician in a future period. Instead of $1-z$ representing the difficulty of overcoming a fear, it is a measure of external forces, such as the threat of reprisal for criticizing the politician, or it represents the probability that weakening the politician on foreign issues will limit his ability to pursue policies outside of this game that voter likes (domestic policy objectives). Continuing this framing further, k_V is the cost of attempting to ensure that the act of withholding support or speaking out is effective (i.e., the cost of organizing sufficient collective action around the protest). Low values of t and z and high values of k_V would limit the citizen's ability to adapt effectively to new knowledge about the politician's past transgressions. In this framing, our model is a principal-agent game where the principal lacks information and is constrained in her ability to react against the agent by more than just the kind of information asymmetry that is common to many principal-agent games. Beyond not knowing the state of the world, her ability to learn, and adapt to what she has learned, is parameterized in the model. That said, we prefer the fear frame in the text as it provides a means for linking the potential benefits of game theoretic modeling to rich empirical literatures about attributes of fear in ways that can aid substantive debates.

more precise statement of the criterion for this game follows, where *EU* is the politician's expected utility given his first period uncertainty about *T* (represented as the probability *t*), *F* (represented as the probability *z*), and S_2 (represented as the probability s) and where *EV* is the citizen's expected utility given her first period uncertainty about the value of S_2:

- $\forall S_1,\ EU(M_1^*(R_1, c_1, k_P, t, k_V, z, s, c_2, x_2)|S_1) \geq EU(M_1(R_1, c_1, k_P, t, k_V, z, s, c_2, x_2)\ |S_1);\ M_1^* \neq M_1$
- If $T=S_1,\ EV(I^*(k_P, k_V, z, s, c_2, x_2)|M_1) \geq EV(I(k_P, k_V, z, s, c_2, x_2)|M_1);\ I^* \neq I$
- $\forall F, S_2,\ U_2(M_2^*(R_2, c_2, k_P)|F)) \geq U_2(M_2(R_2, c_2, k_P)|F);\ M_2^* \neq M_2.$

That is, there are three decision nodes, the politician's communicative decisions in periods 1 and 2 and the citizen's inhibition decision at the end of period 1. A subgame perfect Nash equilibrium consists of best responses to anticipated player strategies (and automatic responses) at all subsequent decision nodes.

The Equilibrium of Fear

The game has a unique subgame perfect solution that connects every possible set of initial conditions to a single set of strategies and a single outcome. The solution distinguishes conditions in which a politician can use fear appeals for political gain from cases in which he has no such power. Contrary to the claims made in the quotations at the beginning of this article, the result shows that the politician cannot scare up support for his policies any time he chooses. How fear affects politics depends on strategic considerations. On the other hand, these mechanics also reveal that the politician's ability to benefit by manipulating information is broader than implied by recent models in International Relations where voters are assumed to know more. A proposition describes the equilibrium. The appendix contains a proof.

Proposition. The game has a unique subgame perfect equilibrium. In it, the politician's period 1 strategy is:

If $S_1=1$ or $s \geq .5$, then $M_1=S_1.$

If $S_1=0$ and $s<.5$ and "$c_2 \leq k_P$ or $zx_2(1-2s) \leq k_V$" and

- $c_1>k_P$, then $M_1=1.$
- $c_1 \leq k_P$, then $M_1=0.$

If $S_1=0$ and $s<.5$ and $c_2>k_P$ and $zx_2(1-2s)>k_V$ and

- $c_1>k_P + tz(c_2-(1-s)k_P)$, then $M_1=1$.
- $c_1\leq k_P + tz(c_2-(1-s)k_P)$, then $M_1=0$.

the citizen's inhibition strategy is:

If $c_2>k_P$ and $s<.5$ and $zx_2(1-2s)>k_V$, then $I=1$

If $c_2\leq k_P$ or $s\geq.5$ or $zx_2(1-2s)\leq k_V$, then $I=0$.

and the politician's period 2 strategy is:

If $F=0$ or $s\geq.5$, then $M_2=S_2$.

If $F=1$ and $s<.5$ and either $S_2=1$ or "$S_2=0$ and $c>k_P$," then $M_2=1$.

If $F=1$ and $s<.5$ and $S_2=0$ and $c\leq k_P$, then $M_2=0$.

The focal implication of this result comes from whether and how the politician's period 1 strategy depends on what follows in the game. Below, we will describe the mechanics of the politician's calculation in greater detail. But to state matters briefly, the result shows how the introduction of fear-based content into the model affects the politician's ability to scare citizens into supporting bad policies. It specifies conditions under which he will (and will not) have an incentive to ask questions such as "Will the citizen learn the truth?" and "How will she adapt to such a revelation?" It clarifies how variations in the psychological factors, t, z, and k_V, alter the politician's strategic calculations, which range from caring only about his own utility -- when the citizen is unlikely to learn the truth or successfully inhibit – to incorporating the citizen's well-being into his decision calculus.

To provide greater specificity about how psychological factors affect the politician's period 1 communication strategy, we work backwards through the game's extensive form, beginning with the second period mechanics and working back to the politician's first move.

In period 2, if the citizen's baseline expectation is that the fearful state of the world is more likely than not to occur ($s\geq.5$), then she supports the politician regardless of his message. In this case, the politician does not need to send an unwarranted fear signal to garner the citizen's support. Alternatively, if the citizen has successfully inoculated ($F=0$), then the politician cannot benefit from sending an unwarranted fear message. In either case, his second period communication strategy is to state the truth ($S_2=M_2$).

In the remaining case, there is no inoculation ($F=1$) and the citizen believes that the fearful state of the world is unlikely ($s<.5$). Here, the politician will send a fear signal if it is warranted *or* the benefit of increased citizen support that comes from "pulling a false alarm" in period 2 is greater than the exogenous reputation costs associated with sending an unwarranted fear message ($c_2>k_P$). This is the only case in which the politician can scare the citizen into supporting a policy that is bad for them in period 2 – but since this decision follows simply from the size of the reputation penalty relative to c_2, we draw no further substantive meaning from it.

Now, moving back one step in the model, the citizen's inhibition decision at the end of period 1 occurs only if she learns that $M_1=1$ when $S_1=0$. If the citizen has reason to believe that the politician cannot benefit from deceiving her in period 2 (because the damage to his reputation will matter more to him then gaining her second period support, $c_2\leq k_P$, or because she believes that he will not deceive her since he can count on her unconditional support in period 2, $s\geq.5$), then she has no reason to try inhibition. Otherwise ($c_2>k_P$ and $s<.5$), the citizen realizes that if she does not inhibit, then the politician may use fear to gain her support in period 2. In this case, investing in inhibition is worthwhile if: the citizen believes that it is likely to help her adapt effectively (z high), the benefits of reacting in accordance with reality are large (x_2 high), the likelihood of the politician sending a false fear signal absent successful inhibition is high ($1-s$ high, as the politician sends a false fear signal only if $S_2=0$), and the cost of attempting inhibition is relatively low. In short, the citizen chooses to invest in inhibition when doing so better aligns her reaction with reality in cases where the politician is likely to use fear to manipulate her and the expected benefit of an adjusted reaction justifies the cost.

We now turn to the politician's first period strategy, the focal point of our analysis. There are two cases in which the politician's decision is straightforward.

If $S_1=1$, the politician sends the fear signal without risk. Initially, the citizen will react by supporting him. If the citizen receives feedback later in the period, she will learn that the signal correctly indicated the state of the world and she will not attempt to inhibit. So, the politician can only gain by sending the fear signal.

If $s \geq .5$ and $S_1=0$, the citizen's baseline expectation will lead her to support the politician in period 1 regardless of his signal. Sending an unwarranted fear signal would not benefit him in this case, because he gains the citizen's support without the signal and would be worse off if the signal prompted an inhibition attempt. He also sends no signal if $c_1 \leq k_P$ and $S_1=0$ because the value of the citizen's support to him is less than the exogenous reputational penalty.

In the remaining case, the politician can use the citizen's fear against her.

Key Interaction. In period 1, the politician scares the citizen into supporting bad policies if $s<.5$ and EITHER $c_1>k_P$ and "$c_2 \leq k_P$ or $zx_2(1-s) \leq k_V$" OR $c_1>k_P + tz(c_2-(1-s)k_P)$ and $c_2>k_P$ and $zx_2(1-s)>k_V$.

When $S_1=0$ and $s<.5$ and $c_1>k_P$, a tension emerges. If the politician wants to be supported, he must send a fear signal. But an unwarranted fear signal can prompt the citizen to invest in inhibition, lead her to ignore the politician in period 2 and, hence, reduce the politician's expected utility from the game as a whole. The question for the politician is whether the short-term benefit of scaring the citizen into supporting a bad policy in period 1 is worth the risk associated with inducing her to react differently to him in the future. His choice depends not only on how he feels about payoffs now versus payoffs later, but also on *what he believes about what the citizen knows, what she is likely to learn, and the extent to which attributes of her fear will affect her ability to adapt to anything she may learn*.

If he expects that the citizen will never learn enough to regret her initial reaction or if he believes that she would not or cannot adapt her behavior even if she does learn that he dissembled ($c_2 \leq k_P$ or $zx_2(1\text{-}2s) \leq k_V$), he will base his decision solely on factors pertinent to his welfare: the immediate benefits of acquiring citizen support (c_1) and the reputational costs associated with sending an unwarranted fear signal (k_P). His calculation changes as the citizen is more capable of adapting to her fear. Here, he sends a false signal if the benefits of citizen support now (c_1) are large relative to: the benefits of future citizen support (c_2), the exogenous political cost of sending a misleading signal (k_P), the likelihood that the citizen will receive informative feedback about the issue in question (t), the likelihood that such feedback will engender successful inhibition (z) if so doing also implies less citizen support in the future, and the probability that the citizen will support the candidate in the absence of a fear signal (s).

Figure 4 provides a graphical depiction of this result. Going from south to north on the "strategic" dimension is analogous to: increasing benefits to the politician from gaining the citizen's support, decreasing the likelihood that the citizen receives feedback, and decreasing the exogenous reputational costs of sending an unwarranted fear signal. Moving from left to right on the "fear attributes" dimension is analogous to moving from an issue where "therapy" is likely to fail to an issue where it is more likely to succeed.

[Figure 4 about here.]

In the bottom row, the exogenous reputational costs of sending an unwarranted fear signal are sufficient to preclude the politician from dissembling. The citizen's emotion-relevant attributes do not bear on his decision. In the top row, the net benefits of gaining the citizen's support in period 1 are so high, relative to the likelihood that the citizen will obtain informative feedback, that the fear relevant variables are insufficient to constrain him. The middle row represents cases where the ratio of support benefits from sending an unwarranted fear signal to the exogenous costs of doing so is not extreme in either direction. This case is where the presence of the fear variables is relevant. Here, if the issue is one where the politician expects the citizen to receive feedback upon which she can act effectively, he will be constrained in his ability to gain from unwarranted fear signals. As the citizen becomes less likely to learn (t decreases which is equivalent to a northward move) or as the issue becomes one in which the citizen cannot suppress her fear (z decreases, which is equivalent to a leftward move), the advantage shifts back to the politician.

Such dynamics explain why claims and counterclaims about fear appeals would peak in the days before an election. As the date of election approaches, there is reduced opportunity for citizens to receive pre-vote feedback about the truth of a fear appeal (i.e., a smaller window of time for which to learn the true value of S_1). If winning the election is more important to the politician than the possible repercussions, then unwarranted fear appeals are more likely to follow. The logic also implies that *if unwarranted fear appeals are going to be used, it will be for distant and abstract issues* – as such issues are less likely to produce the kinds of feedback that make citizens realize, rethink, and possibly act upon, their errors.

These results suggest that a critical component to limiting a politician's ability to scare citizens into supporting bad policies is to promote laws that allow for competitive information transmission. While one cannot easily change the kinds of fears people are likely to have, at least in the short run, one can try to affect the likelihood that political claims about cause-and-effect can be checked quickly and credibly for the public. Where such institutions exist, politicians in the middle range of Figure 4 will be more constrained in using fear to build support for bad policies. By contrast, as politicians are permitted to become more secretive, we can expect to them to have greater latitude to use fear to manipulate the public.

Did the Model's Fear Based-Content Make a Difference?

It is reasonable to ask whether the model's fear-based content made a difference. We demonstrate that it does by comparing our approach and our findings to that of two complementary theoretical endeavors, Bianco (1998) and Bueno de Mesquita (2006).

Attempts to integrate psychological content into formal models of politics are rare. Bianco (1998) is a notable exception. Noting a vigorous debate about whether "rational choice" models were psychologically viable, he explicitly compared psychological and game-theoretic models of candidate evaluation. The psychological model was a formal version of Fiske and Neuberg's (1990) motivated tactician. The game-theoretic model was a standard two-person signaling game. Bianco (1998:1063) found that even though the models arose from different premises about human reasoning, they yielded the "same predictions…motivated tacticians will reason to the same conclusions about a candidate as their rational actor counterparts."

Bianco's argument is important to make. Psychological and game-theoretic approaches are far more compatible than many naysayers allege. But, here, we reach a different conclusion about why this point matters. In his model, the introduction of psychological factors to the analysis does not change the theoretical conclusion. In our model, it does.

The difference stems from our differing approaches to modeling information processing. In Bianco's (1998: 1064) version of Fiske-Neuberg, two assumptions are paramount: "the perceiver makes a snap judgment…based on some immediately apparent feature" and "having formed an initial impression, the perceiver decides whether to gather more information." By contrast, our citizen is motivated to think about gathering more information *only if* he receives feedback $(S_1 \neq R_1)$ that suggests that doing so is worthwhile. Given ample evidence that many citizens pay limited attention to politics and the details of policy making, it makes sense to treat citizens' willingness to gather information as a variable rather than a constant. Moreover, we explicitly incorporate into the model the cost of efforts to change one's reaction, k_V, and we assume that citizens may not be able to act upon they information they receive. Bianco's approach does not factor in such costs and presumes effective use of the information.

To demonstrate the difference more concretely, note that the two models are closest if we assume that information about the citizen always receives feedback and can act upon it freely (i.e., $t=1$, $z=1$ and $k_V=0$). The models are most different if we assume that the citizen does not receive feedback and would be unwilling or unable to act upon such information if it existed (i.e., $t=0$, $z=0$ and $k_V=\infty$). Plugging these values into the key interaction described above reveals the impact of our decision to model citizen attributes to vary in ways that the five premises from the fear literature suggest.

- Similarity-seeking Key Interaction: $t=1$, $z=1$ and $k_V=0$. In period 1, the politician scares the citizen into supporting bad policies if $s<.5$ and $c_1>k_P + (c_2-(1-s)k_P)$ and $c_2>k_P$ and $x_2(1-s)>0$.
- Difference-seeking Key Interaction: $t=0$, $z=0$ and $k_V=\infty$. In period 1, the politician scares the citizen into supporting bad policies if $s<.5$ and $c_1>k_P$.

In the similarity seeking version, the politician must factor in the risks associated with being punished by a citizen who learns that her initial response led her to support a bad policy, represented by $(c_2-(1-s)k_P)$ and $x_2(1-s)$. Here, the politician is quite constrained in his ability to manipulate through fear. In the difference-seeking version, by contrast, the only constraint the politician faces is due to k_P, the exogenous reputation factor. In other words, variations in the fear-based factors drive a wedge between our findings and those of models that do not include the factors. If you believe, as we do, that such variations are present across situations, then it is valuable to articulate their political consequences by explicitly including them in an analysis.

We now turn to the relationship between this model and innovative theoretical work on how public opinion affects the development of counterterrorism policy. Bueno de Mesquita (2006) models an interaction between a politician, a terrorist, and a voter. The politician decides how many and what kind of resources (observable or clandestine) to devote to counterterrorism. Terrorists decide whether and how to attack citizens. Citizens decide whether or not to re-elect the politician. He finds that government will allocate resources to observable anti-terror policies in excess of the social optimum. A key part of the intuition is that when voters are more likely to reelect politicians in return for actions they can observe, then politicians overspend on observable counterterrorism.[9]

This work is an important advance in many respects. However, its conclusions depend on assumptions about what voters know and how they think that are much like Bianco's. In particular, "[t]he voter chooses whether or not to reelect the government based on observing the division of the budget between observable and non-observable spending, the allocation of the observable spending, and the success or failure of the terrorist campaign." (Bueno de Mesquita 2006: 10). Voters know not only that the government engages in observable counterterror activities, but also how much it spends. It also knows that the government spends a certain amount of money on non-observable activities, some of which may include additional counterterrorism efforts and some of which may be devoted to or rent-seeking behavior (i.e.,

[9] Harrington (1993) makes an alternate argument about manipulation. In his model, an incumbent pursues a set of policies that can affect a voter's income. The voter is uncertain about the efficacy of particular policies, but can observe current economic performance. Harrington proves that as voters become more uncertain about how policies work, they rely more on performance in their evaluations of the candidate. The incumbent then gains an incentive to promote policies that will make voters happy now rather than those that would maximize their income over the course of the game.

corruption). The voters also have very precise information about how closely aligned their and the government's preferences align on all such matters. The only thing about which voters are uncertain is how much of the non-observable spending is devoted to counterterrorism. Bueno de Mesquita's conclusion depends not just on voters having this kind of information, but also on voters processing it in very rigorous ways, without the kinds of difficulties seen in our model.

The assumption that voters know so much and think so rigorously does not square well with ample evidence of citizen knowledge of, and attention to, the details of government programs. There is substantial evidence that most voters pay less attention to governmental phenomena that are far more accessible and understandable than the size of various government budgets (Delli Carpini and Keeter 1996). With these facts in mind, we model the citizen as if she uses emotion-laden rules of thumb in her evaluation of policy. Such rules do not require the citizen to know very much and can yield effective decision-making (Gigerenzer, et. al. 1999). Indeed, with sufficient feedback and some mental work, voters can use limited information and forms of reasoning to make the same kinds of decisions they would have made if better informed (Lupia and McCubbins 1998).

Such attributes of voter reasoning matter, because they affect the likely success of important policy recommendations. Consider, for example, the following proposal:

"for any given non-counterterrorism budget, voters should allow the government to increase the amount of rents it extracts by decreasing the expected output of public goods derived from that budget. In so doing, the voters increase the value to the government of holding office, which decreases the government's incentive to act corruptly with respect to the counterterrorism budget." (Bueno de Mesquita 2006:26).

Here, if voters want more security, they should allow more rent-seeking behavior (which can include various kinds of corruption). The logic being is holding office becomes more valuable to politicians, they will work harder to prevent the terror attacks that cause voters to boot them out of office. But if voters could actually restructure government incentives in this way, what would be the government's best response? If officeholders like rents, they would have an incentive to increase the demand for security even further. Following the proposal's logic, voters would then allow even more rent-seeking. One way in which politicians could try to induce such demands is through unwarranted fear appeals – a tactic that would prove particularly effective when voters receive limited feedback about the true state of the world and are limited by fear – or other factors – to punish such manipulation. Given that voters tend to lack such information and our theoretical findings, it is not at all clear that increasing rents will yield more efficient and effective governance.

Bueno de Mesquita (2006:27) later suggests that "One possible institutional response that could mitigate the agency problem while preserving secrecy is a non-partisan, non-elected monitoring body (such as the 9/11-commission in the U.S.)." Our work suggests that such a body would face challenges. For example, if voters have limited knowledge and pay limited attention to politics, and if lack of feedback, fear-based factors, or other variables prevent them from developing highly effective rules of thumb, then our work suggests that opportunistic politicians or other interests would have an incentive to commandeer or at least influence the body.

To make this body more effective, it must be sufficiently credible to simultaneously offer truthful information to the public while altering the incentives of opportunistic politicians. Such attributes must be built into the design of information-providing institutions rather than assumed to follow from their existence (McNollgast 1987). Credibility assessments, in turn, come not from institutional designers but from the perceptions of the target audience. When attempting to minimize fear-based political manipulation, therefore, it is important to understand what voters know and how they think. Empirics increasingly suggest that voters see many political situations through lenses that are colored by emotions. These lenses lead voters to react in different ways than they would have if they were efficient and effective information processors. Our work provides a way to understand the political dynamics of fear-based manipulation in the presence of such citizens.

Discussion

Fear affects politics. Many political actors are strategic. Those who believe these two statements should be open to the idea that strategic decisions influence how fear affects politics. They should also be open to the idea that attributes of citizens' fear can affect the practical and policy consequences of strategic calculations by politicians. Our work offers a demonstration of how to integrate these factors in a research design that corrects popular beliefs about the ease with which politicians can scare citizens. It refines theoretical claims about when politicians will act in accordance with voter interests.

The work also clarifies the conditions under which important empirical claims about fear and politics generalize across contexts. To see how, note that extant scholarship tends to focus on cases where an emotion has already been provoked (e.g., the effects of fear and anxiety in the months and years following the New York and Washington terror attacks of September 11, 2001). Other work, particularly that based on American National Election Studies data, examines how often longer-lasting social phenomena or political figures make respondents "fearful," "angry," and so on.[10] Collectively, such work documents emotional responses to political

[10] Reframing and extending the model can clarify when politicians use anger to increase their power. In this version, let the two possible states of the world be described one in which citizens should be angry with a particular enemy ($S_1=1$) and one in which such anger is unjustified ($S_1=0$). The politician then chooses whether or not to make an incendiary statement about the enemy ($M_1=1$) or not ($M_1=0$). The citizen's choice entails delegating greater authority to the leader ($R_1=1$) for dealing with the enemy or not ($R_1=0$). The model would work best for cases where the leader's statement is sufficient to induce an automatic and visceral response ($M_1=1$ implies $R_1=1$). Beyond changing labels to fit the new story, the

phenomena. But the selection criteria underlying such studies can undermine the credibility of attempts to generalize their results to other situations.

When contemplating generalization of such work, it is important to account for the fact that researchers tend to ask about people and events *that they suspect have caused emotional reactions*. They tend not to ask about other topics. When such selection criteria are an integral part of the research design, we must be cautious when drawing general inferences about the political consequences of fear or other emotions from such findings.

Issues vary in the extent to which citizens can overcome their fears (i.e., two issues can be associated with different informational and psychological characteristics – represented here as values of t, z and k_V) and in the extent to which politicians have incentives to mobilize citizen support (represented here as c_1, c_2, and k_P). Two issues that are objectively equivalent in terms of the danger they pose (e.g., domestic terrorism versus terrorism from abroad) can – if they differ on the kinds of variables named in the equilibrium above -- yield very different outcomes. Strong emotional responses to one of the two issues need not replicate if the second issue is one for which the fear-producing conditions described above are not met. Without accounting for the interplay of strategic and psychological factors, there is reason to be skeptical of broad claims about the applicability of specific empirical findings.

Experimental research can further improve the applicability of research of politics and fear. Since political leaders are not easily recruited into participate in experiments, creativity is needed to evaluate focal implications of our model experimentally. A common design strategy

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game remains the same. The resulting "equilibrium of anger" distinguishes cases in which the politician can use unjustified anger provocations to increase his power from cases where he cannot. As was true in Figure 4, the politician's latitude for gaining power by stoking anger is increased for issues on which personally damaging feedback is unlikely (distant and abstract issues or issues for which it is possible to be secretive). But as citizens can verify for themselves whether or not granting increased power to a leader is the most effective way for dealing with an enemy, and as they can regulate their anger to match the situation, the leader's power to manipulate diminishes.

for dealing with such problems is to include experimental subjects -- who are trained and compensated to emulate the politician's role -- playing a game with other subjects – in citizen roles -- whom they are able to stimulate emotionally (i.e., a variant of the strategic persuasion experiments described in Lupia and McCubbins 1998). A complementary tack follows Mutz's and Reeves' (2005) work on how variations in the civility amongst political elites in televised interactions affects viewer attention and responsiveness. In their study, actors play the elite roles and their actions are scripted to suit the experimental design. While leader actions are not endogenous as is the case in our model, they may appear more realistic to subjects who are playing the role of citizens. If designs such as these can be coordinated, their collective impact can more effectively document citizen reactions and inhibitory mechanics in political contexts, which should yield a better understanding of which empirical and theoretical claims about the political impact of fear are relevant to particular situations.

Appendix: A Proof of the Proposition

We proceed by backward induction. In period 2, the politician has the only strategic move. The citizen's response is as defined in the text: determined by her baseline expectation s, if $F=0$ or $M_2=0$, or her automatic response to a fear signal, if $M_2=F=1$. The politician's period 2 utility calculation depends on the value of S_2, F, and whether or not $s \geq .5$. Throughout the proof, s's relation to .5 matters because it determines whether or not the citizen will support the politician absent a fear signal.

If $s \geq .5$, the citizen supports the politician regardless of his actions. In period 2, this follows because $U_2(M_2=S_2)=c_2 > U_2(M_2 \neq S_2)=c_2-k_P$ and $k_P>0$, by definition.

Now consider the case $F=0$. Here, inhibition succeeded and the citizen ignores M_2. Hence, $U_2(M_2=S_2)=U_2(M_2 \neq S_2)-k_P$. So, if $s \geq .5$ or $F=0$, the politician's best response is $M_2=S_2$.

In the remaining case, $F=1$ and $s<.5$, the citizen's reaction depends on the politician's period 2 strategy. If $S_2=1$, then $U_2(M_2=1|S_2=1)=c_2$, $U_2(M_2=0|S_2=1)=-k_P$. Hence, the politician's best response is $M_2=1$. If $S_2=0$, then, $U_2(M_2=1|S_2=0)=c_2-k_P$, $U_2(M_2=0|S_2=0)=0$. Here, the politician's best response is $M_2=1$ if the benefit of having the citizen's support, c_2, is greater than the cost of sounding a false fear alarm, k_P.

Now we move to the citizen's inhibition investment decision at the end of period 1. At this point in the game, the citizen would know that she is at the information set $S_1=0$, $M_1=1$, $T=S_1$. Hence, her expected utility calculation at this node depends on whether or not $s \geq .5$ or $c_2 \leq k_P$.

If $s \geq .5$, then she supports the politician regardless of his actions. If $c_2 \leq k_P$, then the politician does not gain utility by sending a false fear signal, so the citizen infers that $S_2=M_2$. In neither case does her period 2 utility depend on whether or not she inhibits. Therefore, in both cases $EV(I=1)=EV(I=0)-k_V$. Since $k_V>0$, the citizen's best response is $I=0$.

In the remaining case, $c_2>k_P$ and $s<.5$, the politician will send a fear signal in period 2 regardless of whether or not it is warranted. Therefore, the citizen's expected utility in period 2 depends on her inhibition strategy. Here, $EV(I=1)=[z(1-s)x_2]+[(1-z)sx_2]-k_V$ and $EV(I=0)=sx_2$. In other words, if she invests in inhibition then with probability z, it works. Since $s<.5$, successful inhibition implies that she will not react fearfully in period 2, a reaction which she expects will provide her with payoff x_2 when the non-fearful state occurs (which she expects with probability $1-s$). With probability $1-z$, inhibition does not work, in which case she knows that she will react fearfully to $M_2=1$ in period 2, which will provide her with payoff x_2 when the fearful state occurs (which she expects with probability $1-s$). In this case, $EV(I=1)>EV(I=0)\Leftrightarrow zx_2(1-2s)>k_V$.

The game's first move belongs to the politician. Recall that the citizen's response to the politician's period 1 fear signal is automatic, the politician receives period 1 utility of c_1 just by sending such a signal. Beyond this, the politician's period 1 expected utility calculation depends on the true value of S_1 and whether or not $s\geq.5$ or $c_2\leq k_P$.

We first examine the case $S_1=1$. Here, the citizen cannot receive feedback that the fear stimulus ($M_1=1$) was inconsistent with reality, so the inhibition investment node is not reached. In this case, the politician's period 1 expected utility calculation depends on whether or not whether or not $s\geq.5$ or $c_2\leq k_P$.

If $s\geq.5$, the citizen supports the politician unconditionally in both periods. Hence, $EU(M_1=1|S_1=1)=c_1+c_2$ and $EU(M_1=0|S_1=1)=c_1+c_2-k_P$. Since $k_P>0$, the politician's best response is $M_1=1$.

If $s<.5$ and $c_2 \leq k_P$, then the politician will send only a truthful fear signal in the second period and the citizen will support the politician in period 2 if he sends a fear signal. Hence, $EU(M_1=1|S_1=1)=c_1+sc_2$ and $EU(M_1=0|S_1=1)=sc_2-k_P$. Since $c_1>0$ and $k_P>0$, the politician's best response is $M_1=1$.

If $s<.5$ and $c_2>k_P$, then the citizen will support the politician in period 2 only if he sends the fear signal. Since the benefits of so doing in period 2 will outweigh the costs even when fear is unwarranted the politician will send the fear signal in period 2 regardless of S_2. Hence, $EU(M_1=1|S_1=1)=c_1+sc_2+(1-s)(c_2-k_P)$ and $EU(M_1=0|S_1=1)= sc_2+(1-s)(c_2-k_P)-k_P$. Since $c_1>0$ and $k_P>0$, the politician's best response is $M_1=1$.

We now turn to $S_1=0$. If $M_1=0$, then there is no fear signal, the citizen cannot receive feedback that the fear stimulus was inconsistent with reality, and the inhibition investment node is not reached. If $M_1=1$, not only must the politician pay cost k_P, but the sequence that can lead to inhibition can be reached. In this case, the politician's period 1 expected utility calculation depends on whether or not whether or not $s<.5$, $c_2 \leq k_P$, and the conditions for the citizen choosing to invest in inhibition are satisfied.

If $s \geq .5$, the citizen supports the politician unconditionally in both periods. Hence, $EU(M_1=1|S_1=0)=c_1+c_2-k_P$ and $EU(M_1=0|S_1=0)=c_1+c_2$. Since $k_P>0$, the politician's best response is $M_1=0$.

If $s<.5$ and $c_2 \leq k_P$, then the politician will send only a truthful fear signal in period 2, the citizen will have no reason to inhibit, and the citizen will support the politician in period 2 only if he sends a fear signal. Hence, $EU(M_1=1|S_1=0)=c_1-k_P+sc_2$, $EU(M_1=0|S_1=0)=sc_2$ and the politician's best response is $M_1=1 \Leftrightarrow c_1>k_P$.

If $s<.5$ and $c_2>k_P$ and $zx_2(1-2s)\leq k_V$, then the citizen will not invest in inhibition. She will support the politician in period 2 only if he sends the fear signal. Since the benefits of so doing in period 2 will outweigh the costs even when fear is unwarranted, the politician will send the fear signal in period 2 regardless of S_2. Hence, $EU(M_1=1|S_1=0, s<.5, c_2\leq k_P)=c_1-k_P+sc_2+(1-s)(c_2-k_P)$, $EU(M_1=0|S_1=0)=sc_2+(1-s)(c_2-k_P)$, and the politician's best response is $M_1=1\Leftrightarrow c_1>k_P$.

In the remaining case, $s<.5$ and $c_2>k_P$ and $zx_2(1-2s)>k_V$, sending an unwarranted fear signal in period 1 can induce inhibition which can affect the politician's utility in period 2. If the politician sends no fear signal in period 1, then inhibition is not triggered and $EU(M_1=0|S_1=0)=sc_2+(1-s)(c_2-k_P)$, as above. If the politician sends a fear signal, then with probability t, the citizen receives feedback, learns that it was unwarranted, and invests in inhibition. With probability $1-t$, she receives no feedback and $F=1$. If she does invest, inhibition succeeds with probability z, in which case $M_2=1$ is treated like $M_2=0$. With probability 1-z, the attempt fails in which case she responds as if $F=1$. Hence, $EU(M_1=1|S_1=0)=c_1-k_P+(1-tz)(sc_2+(1-s)(c_2-k_P))$, which compared to $EU(M_1=0|S_1=0)$, yields the politician's best response being $M_1=1\Leftrightarrow c_1>k_P+tz(c_2-(1-s)k_P)$. **QED**

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Period 1 begins. The politician learns the true state of the world.	He chooses whether or not to issue a fear-provoking message.	The citizen's initial reaction is automatic, non-strategic, and affects her support of policy.	Later, the citizen may receive feedback (new information) about the true state of the world.	If she learns that her initial reaction led her to support a bad policy, she can try to inhibit future fearful reactions.	An inhibition attempt is costly to the citizen and not always successful.	**Period 2 begins.** The politician learns the true state of the world.	He chooses whether or not to issue a fear-provoking message.	The citizen's reaction can depend on her inhibition attempt and affects her support of policy. **The game ends.**

Figure 1. Timeline.

Figure 2. The Extensive Form of Period 1

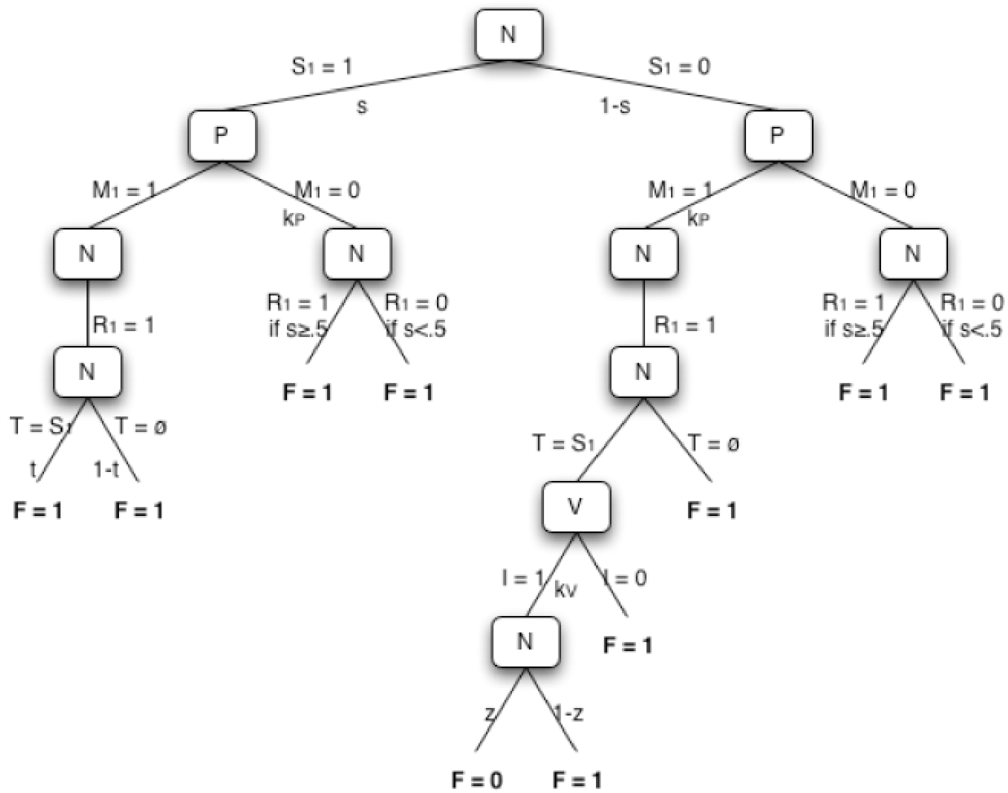
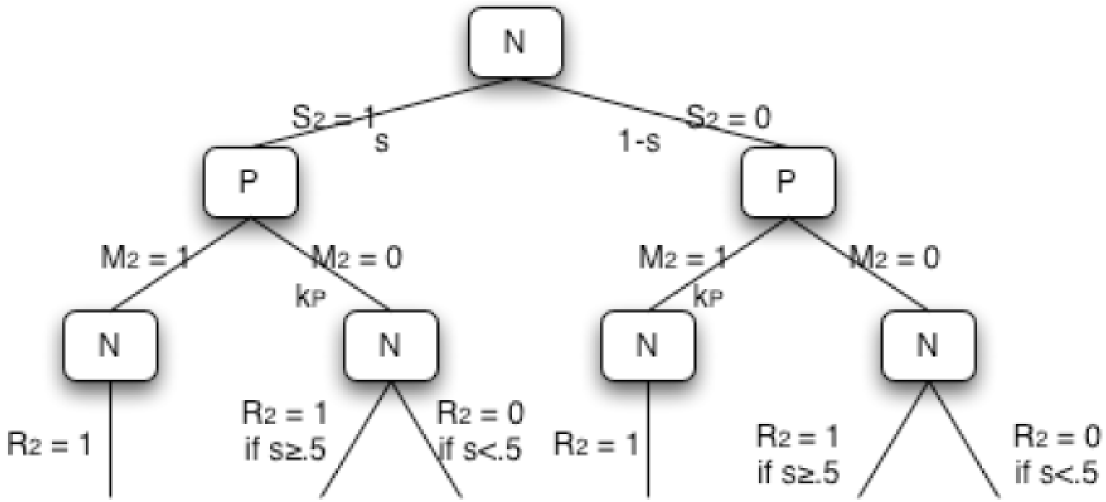


Figure 3. The Extensive Forms of Period 2

If *F=1*



If *F=0*

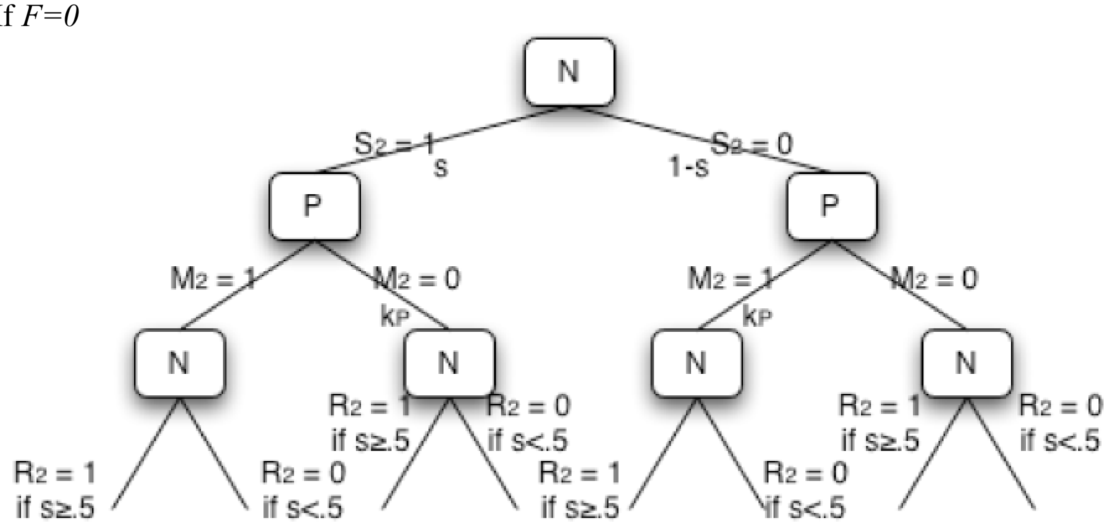


Figure 4. Depiction of Comparative Statics

For the case where a fear message would be unwarranted, $c_2 > k_P$ and …	$zx_2(1\text{-}s) \le k_V$ Adaptation likely to fail and/or costly to attempt	$zx_2(1\text{-}s) > k_V$ Adaptation is likely to succeed and be perceived as cost-effective
$c_1 > k_P + tz(c_2\text{-}(1\text{-}s)k_P)$ The politician obtains large benefits from public support and believes that citizens will remain ignorant	YES	YES
$k_P \le c_1 \le k_P + tz(c_2\text{-}(1\text{-}s)k_P)$ The politician obtains medium benefit from citizen support and believes that citizens are likely to learn the truth	YES	NO
$c_1 < k_P$ Benefit from citizen support low relative to exogenous reputation costs.	NO	NO

⇐ Fear Attributes Dimension ⇒

⇐ Political Strategy Dimension ⇒

Cell entries refer to the question "Can the politician scare citizens into supporting bad policies?"