When Can Politicians Scare Citizens Into Supporting Bad Policies? Strategy and Emotion in an Equilibrium of Fear

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Abstract

Emotions affect politics. So does strategic behavior. But studies of how emotions affect politics tend not to account for strategic behavior -- and vice versa. Such practices limit our understanding of emotions' political relevance. We pursue a constructive integration. Using a formal model, we identify conditions under which a strategic political leader will use fear to induce citizens to support bad policies. We build the model from empirical premises about fear and why unwarranted fears persist. We then identify an *equilibrium of fear* -- an interactive relationship between automatic, unconditional cognitive phenomena and conscious adaptations to external incentives. The equilibrium distinguishes moments at which a politician can scare citizens into accepting policies that they would otherwise reject from moments at which he has no such power. Other findings clarify issues (abstract and distant) and leaders (secretive) for which current emotions-in-politics insights best apply.

> "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

> "New Jersey Governor McGreevey and Health Commissioner Davy's letter to low-income seniors five days before Election Day is a shameless political tactic only meant to scare seniors."
>
> House Speaker J. Dennis Hastert, October 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 claim that politicians use fear to manipulate the public. Of particular concern are politicians who create unwarranted fear for personal or political gain. In recent years, critics have accused the Bush administration of using fear to scare citizens into supporting policies that they would otherwise oppose. 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 citizens would otherwise oppose? A common presumption is that politicians, by virtue of their office and their privileged access to information, can do so whenever they wish. We contend that such claims ignore several important aspects of the strategic calculations that politicians make as well as basic attributes of the psychology of fear.

While there exist conditions under which political leaders can use fear to get what they want, there are also important constraints.

Our approach to the problem is based on the premise that integrating the inferential power of game theory with empirical findings on emotions can clarify emotions' political relevance in ways that studies focusing on only emotions or strategic behavior cannot. Our approach complements existing research on politics and emotions (see, e.g., Kinder (1994), Lodge and Taber (2000), Rahn (2000), Markus, et. al. (2000), McDermott (2006), Lerner, et. al. (2003) and Brader (2006)). The current literature, which is largely empirical, accumulates evidence and insight on how citizens experience emotions such as fear. But it has not yet examined how citizen emotions and elite decisions interact in political contexts. So, it is not well equipped to explain the types of issues and leaders for which current claims about emotions-in-politics are relevant. To clarify the conditions under which the empirical findings apply, we need an approach that integrates politics' emotional and strategic elements.

But our approach flies in the long-standing Cartesian postulate that emotion and reason are separate cognitive functions. Persisting belief in the postulate fuels the hypothesis that game theory and the study of emotions are mutually irrelevant. Evidence appears to support the belief. Consider, for example, that:

> "[E]motions are things that happen to us rather than things we will to occur … external events are simply arranged so that the stimuli that automatically trigger emotions will be present. We have little direct control over our emotional reactions." LeDoux (1996:19)

It is hard to disagree with the claim that emotional responses have a strong subconscious component. It may even seem reasonable to conclude that game theory -- with its focus on incentives, strategic decision making, and goal-oriented learning -- cannot be a useful

way to clarify emotional aspects of politics. Lest such claims be viewed as a straw man, consider Elster's (2000: 692) recent conclusion:

> "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."

While there is much to disagree with in such claims, such as the notion that emotions always impair decision quality or the tendency to confound game theory as a method with narrow rationality notions, they are not our focus. Ours is a constructive attempt to integrate insights from the study of emotions with the analytic advantages of game theory to clarify an important element of the relationship between politicians and citizens.

Still, the question remains, "How can game theory clarify the political relevance of emotions?" Our response is as follows. Emotional responses have subconscious aspects. These aspects are beyond the purview of strategic decision-making, incentives, goal-oriented learning and other phenomena for which game theory is effective in understanding. But there is more to emotions and politics than what happens at the subconscious level.

In thinking about the extent to which a game-theoretic logic of emotion is possible, we find Damasio's (1994:134, emphasis in original) distinction between primary and secondary emotions useful.

> "Primary emotions (read: innate, preorganized, Jamesian) depend on limbic system circuitry, the amygdala and anterior cingulate being the prime players…But the mechanism of primary emotions does not describe the full range of emotional behaviors…. they are followed by mechanisms of secondary emotions, which occur once we begin experiencing feelings and forming *systematic connections between categories of objects and situations, on the one hand, and primary emotions, on the other.*"

Unlike primary emotions, secondary emotions can be learned and inhibited. The question becomes, "How?" Can we study learning and inhibition using concepts that game theory represents well? This question is answered by examinations of emotions at the neural substrate level. These studies 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, emotional responses will be a function of controlled goal-oriented learning, at least in part. Goal-oriented learning, in turn, can be affected by incentives. Indeed, as Damasio (1995:124, emphasis added) argues:

> Culture and civilization could not have arisen from single individuals and thus cannot be reduced to biological mechanisms and, even less, can they be reduced to a subset of genetic specifications. Their comprehension demands not just general biology and neurobiology but the methodologies of the social sciences as well. In human societies there are social conventions and ethical rules over and above those that biology already provides. Those additional layers of control shape instinctual behavior so that *it can be adapted flexibly to a complex and rapidly changing environment* and ensure survival for the individual…"

Therefore, incentives and strategy can affect the conditions under which emotions affect politics. As game theory is an effective way to understand how incentives and strategies affect behaviors and outcomes in other contexts, we contend that it can help bring the conditional relationship between emotional responses and political outcomes to light.

To this end, we develop a model to address the question – when can politicians scare people into supporting policies that are bad for them? Our model features two

players, a strategic politician and a citizen who is not entirely strategic, in a two-period game. The first period begins with a politician who has private information. He then chooses what to say about what he knows. One of his options is to make a statement that will cause the citizen to respond fearfully. This response is automatic and unconditional – it is beyond conscious control. Later in the period, the citizen may receive feedback about her response and may attempt to inhibit similar reactions in the future. In the second period, the politician receives new information and can communicate once again. Depending on the feedback properties and inhibitory mechanics of the first period, the citizen may react differently to a fear appeal in the second period.

How emotions affect politics in the model is the result of an equilibrium between automatic cognitive phenomena and conscious adaptation to incentives. In equilibrium, the politician's use of fear, and its impact on the political outcome, depends on an interaction between the politician's current needs, how he thinks about his political future, and what he and the citizen believe about her ability to contain her fear. Even when the citizen is only partially strategic, in the sense that her reactions are sometimes automatic, the potential of her conditioning against future fear messages limits the set of circumstances in which the politician will provoke unwarranted fear. The political impact of fear is a consequence of how psychological and strategic phenomena interact.

We continue by describing the set of empirical premises that guided our modeling choices. Then, we present the model, derive our main result (the equilibrium of fear) and describe its substantive implications. A brief appendix contains additional mathematics.

A Foundation for Modeling Emotions and Politics

How we represent emotional phenomena in our model follows from five basic premises. These premises come from psychological and neuroscientific studies of emotion-related phenomena. Each of the premises shares three important characteristics: they are empirical in nature, widely replicated, and not controversial amongst researchers who work in these areas.

1. Fear is frequently an unconditional, automatic response.

Many studies document the automaticity of human fear responses. As LeDoux (1996: 128) describes:

> [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 we called the emotional unconscious…"

In an initial encounter with a scary stimulus, we have minimal control over the advent of fear.

2. A fearful response can induce subsequent information processing.

We assume that emotions may drive subsequent attention towards objects that would otherwise receive habitual 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. While our in-the-moment fear response to an object is largely unconscious, activation of the fear system in response to future stimuli can be adjusted.

The notion that such reactions can change is consistent not only with the norms of strategic approaches to the study of politics but also with Damasio (1994: 177-179):[1]

> "[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. In other words, they are based on the process of secondary emotions…Somatic markers are thus acquired by experience, under the control of an internal preference system and under the influence of an external set of circumstances which include not only entities and events with which the organism must interact, but also social conventions and ethical rules."

Humans are endowed with the ability to create new fears. This makes sense, particularly for goal-oriented actors: just as fear itself is 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."

4. As part of this emotional adjustment, preferences and incentives can help regulate 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 the conditional stimulus (CS – e.g., a bell) and the unconditional stimulus (US – e.g., an electric shock), successful extinction processes create a second, inhibitory connection (i.e., a second

[1] 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).

sound) between the CS and the US (Davis and Myers 2002:1000).[2] 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." That is, the capacity of the CS to elicit the fear reaction can be diminished by subsequent presentations of the CS without the US.

5. Feedback is necessary to extinguish old fears.

Creating or 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. This need for an informative unconditional/conditional stimulus pairing is a central tenet of contingency theory, pioneered by Robert Rescorla. While describing the theory, Leahey and Harris (2001:83) claim, "If a stimulus is going to be a CS, there must be a unique predictive contingency between it and the US."

But how common is such informative feedback? 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 the conditional stimulus provides little or no information. In our model, the availability of such information will be a key variable.

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

[2] 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).

citizens who share interests and perceptions. While the politician is fully strategic, the citizen is only partially so.[3]

In each period, the politician must make a decision about what to say. The citizen's initial reaction to any such statement is unconditional and automatic. It is not strategic. Though she benefits from reacting in ways that are consistent with her interests, her ability to act strategically comes later and only if she reaches a point in the game where she can attempt to adjust future fears. So while the model has a communicative element, 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, Bayesian learning is not presumed.

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?" Unless otherwise noted, and there will be important exceptions, we assume that all aspects of the game are common knowledge.

[Figures 1-3 about here.]

The game begins with a 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

[3] In this sense, our representation of the citizen reflects the "two systems" approach to emotional decision 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.

fearfully (i.e., a bad thing is happening). If $S_1=0$, there is no rationale for a fearful response. Initially, the politician knows the true state of the world, but 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 $1-s$. So, absent any additional information, the citizen believes that a bad thing is happening with probability s. It is common knowledge that the citizen believes this and that the true prior probability of $S_1=1$ is 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 depict the state of the world truthfully. He may send a fear signal ($M_1=1$) when reality does not justify it ($S_1=0$), or vice versa. We assume that sending an unwarranted 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's policies or she does not $(R_1 \in \{0,1\})$. $R_1=1$ denotes her support for the candidate's policies in a setting that matters to him (such as a meaningful public forum, an election, or a poll). $R_1=0$ denotes her disapproval.[4] Following premises 1 and 2, the citizen unconditionally and automatically

[4] Alternatively, one can think of $R_1=1$ as representing the citizen's willingness to grant continued, or some exogenously determined amount of increased discretion, over the policy domain. $R_1=0$ would represent the citizen withholding such authority. For cases where citizens actually have such discretion to give, one can

treats $M_1=1$ as sufficient evidence that the fearful state of the world is at hand $(S_1=1)$ and supports the policy. The citizen's period 1 utility, V_1, from her response, R_1, depends on how 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 better off not supporting his policy ($R_1=0$).

Continuing with the citizen, recall that $M_1=0$ denotes the absence of a fear signal. In the absence of a stimulus, we assume that there is nothing new for the citizen to think about. There is no stimulus. Hence, her support for the politician follows 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.

The politician, in turn, values citizen support -- though how much he values it is a variable in this model. 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 $(U_1(R_1=0)=0)$.

We now turn to the ways in which the first period can end. Following premise 3, 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, $T=S_1$. This is the only case in which the citizen learns about her period 1 utility before the game ends. With probability $1-t$ if a fear signal with sent (or with probability 1 if no fear signal was sent), Nature reveals nothing. In this case, $T=\varnothing$, the citizen receives no feedback about

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think of the game clarifying when the politician can use fear to gain power and when fear leads citizens to choose suboptimal levels of delegation.

her initial response. Following premise 5, we assume that the absence of feedback provides no basis for the citizen to rethink her previous reaction and, as a result, ends the period.

If the citizen does receive feedback, $T=S_1$, the first period continues. Here, the citizen learned 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 decides whether to invest the time and effort necessary to attempt to extinguish similar responses in the future. Following premise 4, extinction can be a difficult process, requiring "the establishment of an inhibitory connection between the CS and the US." (Davis and Myers 2002:1000).

We model this choice as an inhibition investment decision, $I \in \{0, 1\}$. $I=1$ denotes a decision to pay cost $k_V>0$ to think about and potentially inhibit a fear response in the game's second period (e.g., self-administered or professional cognitive-behavioral therapy). $I=0$ denotes the decision not to rethink her previous response (i.e., no therapy).

Again following from premise 4, 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 in this model, 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 the description of period 2 to fill out its mechanics.

At the beginning of the second period, the true state of the world for the period, $S_2=\{1,0\}$, is determined, where S_2 is defined analogously to S_1 (i.e., only the politician directly observes the true value of S_2 ; $S_2=1$ 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 of $R_2=0$ for the politician and $R_2 \neq S_2$ for the citizen remain zero.

We now return to our model's 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 $M_2=0$ (i.e., 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 change her emotional response, if she tries.[5] To reiterate, the fear factor, F, equals 1 if any of the following is true:

- The citizen observed no fear signal in period 1 ($M_1=0$) and so was never induced to rethink her response.
- The citizen observed such a signal but did not receive feedback about it ($M_1=1$ and $T=\varnothing$).
- The citizen received feedback and learned that reacting fearfully was appropriate ($M_1=1$ and $T=S_1$ and $S_1=R_1$).
- The citizen 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 $I=0$).
- The citizen 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, like the first period, the citizen's response in period 2 is unconditional and automatic. Unlike before, however, her fear 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

[5] Empirically, high values of z are more likely when context remains constant, the unconditioned stimulus is consistent, and the time between unconditioned stimuli is minimal. (Cain, Blouin and Barad 2003:323)

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, $I=0$.

Results

In this section, we present a result called the *equilibrium of fear*. Then, we use the equilibrium 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. A 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:

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

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 is an *equilibrium of fear* -- an interactive relationship between automatic, unconditional cognitive phenomena and conscious adaptation to incentives. This result distinguishes conditions in which a politician can use fear appeals for political gain from cases in which he has no such power. It shows that the politician cannot scare up support for his policies any time he chooses. How emotions affect politics depends on strategic considerations. Proposition 1 describes the equilibrium. The appendix contains a proof.

Proposition 1. The game has a unique subgame perfect equilibrium.

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 $I=0$.

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 $M_2=0$.

To guide intuition, we now describe key features of the equilibrium. Our main focus is on the first period. Here, the politician and citizen's period 1 actions depend on their expectations of what will happen later in the game. In particular, the citizens' inhibition decision is based on their beliefs about the second period, while the politician's first period communication strategy depends on his beliefs about the citizen's emotional

status. To clarify all such mechanics, we work backwards through the game beginning with the politician's second period strategy, and working backwards through the game's extensive form.

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, sending an unwarranted fear signal is not needed to garner the citizen's support – so the politician cannot gain by sending one. 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 follows the true state of the world ($S_2=M_2$).

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.

We now turn to the citizen's inhibition decision at the end of period 1. This decision node occurs only if she learns that $M_1=1$ when $S_1=0$. While she cannot retract her initial response, she can attempt to alter future responses. Her decision depends on some of the same factors that affect the politician's period 2 strategy. For example, 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 invest in inhibition.

In the remaining case, ($c_2 > k_P$ 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. Investing in inhibition is worthwhile if: the citizen believes that it is likely to be effective (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 game's first strategic move. In the equilibrium of fear, his strategy can depend on an interaction between attributes of his political future, the likelihood that the citizen would learn the truth about an unwarranted fear signal, and his beliefs about the citizen's ability to inhibit future responses. There are several cases in which his 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. If he sends no fear signal, then the citizen supports his policy and does not contemplate an inhibition attempt. Sending an

unwarranted fear signal cannot benefit him in this case and would make him worse off if it 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 cost of sending an unwarranted signal.

To this point, we have described conditions in which the politician cannot use an unwarranted fear appeal to win the citizen's support in period 1. The remaining case pinpoints when the politician can use the citizen's fear against her.

Theorem. 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 $zx_2(1-s) \leq k_V$"**
- **$c_1>k_P + tz(c_2-(1-s)k_P)$ and $c_2>k_P$ and $zx_2(1-s)>k_V$.**

In period 2, this outcome occurs if $s<.5$ and $F=1$ and $c_2>k_P$.

The intuition of the result is as follows. When $S_1=0$ and $s<.5$ and $c_1>k_P$, a tension emerges. Here, sending a fear signal is necessary for producing support in period 1 -- support from which the politician receives considerable benefit. But an unwarranted fear signal can produce negative feedback, which 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 on what he believes about the citizen's emotions. If he expects to be able to manipulate the citizen again ($c_2 \leq k_P$ or $zx_2(1-2s) \leq k_V$), then he will simply base his decision on the immediate benefits of acquiring citizen support (c_1) versus exogenous costs associated with sending an unwarranted fear signal (k_P). In this case, he is relatively unconstrained in his ability to use fear to draw support.

When the politician anticipates attempts to inhibit, by contrast, his calculation includes other factors. Here, the politician will send the fear 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 the same result – how emotional and strategic factors interact to determine when the politician can scare the citizen into supporting a bad policy. The figure's vertical dimension represents the factors most pertinent to the politician's strategic decision about what to say in the first period. Going from south to north on this 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 costs of sending an unwarranted fear signal. The figure's horizontal dimension represents factors pertinent to the citizen's emotional response. Moving from left to right is analogous to moving from an issue where an attempt to inhibit an unproductive emotional response is likely to fail to and issue where "therapy" is more likely to succeed.

[Figure 4 about here.]

In the bottom row, the exogenous costs of sending an unwarranted fear signal preclude him from sending one and the citizen's emotion-relevant variables 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 other emotion 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 neither very high nor negative. This case is where the emotional variables are relevant. Here, if the issue is one where the politician expects the citizens to receive feedback upon which they can act effectively, he will be constrained in his ability to gain from unwarranted fear signals. As feedback becomes less likely (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 behind a fear appeal. 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 perhaps act on, their errors.

These results suggest that a critical component to limiting the circumstances in which political leaders can scare citizens into supporting policies that they would otherwise reject 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, informative feedback is more likely, and 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.

Discussion: An Alternative Application, Empirical Implications and Next Steps

An alternate application for this model is to clarify the role of other emotions in politics. A prime candidate for such an application is anger. Many observers point to instances where politicians manipulate citizens by citing them to anger. Indeed, recent empirical research describes how anger can be converted into political action (see, e.g., Gault and Sabini 2000, Lerner and Keltner 2001, McDermott 2004).

By renaming some of the model's factors, we can address a question such as, When can politicians use anger to increase their power? In the anger version of the model, 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 -- perhaps by supporting him publicly -- or not empowering him further ($R_1=0$). We examine the case where the leader's statement is sufficient to induce an automatic and visceral response ($M_1=1$ implies $R_1=1$). Beyond these labels, the structure of the game is identical to the "fear" version and all second period actions follow the new labeling plan.

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 quality of feedback and the citizen's ability and willingness to inhibit subsequent responses influence the politician's decisions and, hence, how emotions will affect the outcome of the game. For issues on which personally damaging feedback is unlikely (distant and abstract issues or issues for which it is possible to be secretive), the politician's latitude for gaining power by stoking anger is increased. 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 emotional responses to match the situation, the leader's power to manipulate diminishes.

Such results clarify when we should expect to see (and not see) politicians make statements that induce citizens' fear, anger, or other emotions that they can attempt to induce through strategic action. As a result, they clarify the range of situations in which many contemporary empirical claims on emotions and politics best apply. To see how, note that some extant scholarship focus on cases where an emotion has already been provoked (e.g., the months and years following the New York and Washington terror attacks of September 11, 2001), while other work examines how frequently longer-lasting social phenomena or political figures make respondents "fearful," "angry," and so on. Collectively, such work documents emotional responses to political phenomena. But the selection criteria underlying such studies can make generalizing their results tricky.

Researchers tend to ask about people and events *that they suspect have caused emotional reactions*. They tend not to ask about other topics. When topical selection criteria are part of the research design, we should be cautious when drawing broad

inferences about the political consequences of an emotion such as fear, anger, or anxiety from the data. Indeed, issues vary in the extent to which citizens can overcome their fears (i.e., different issues are associated with different psychological characteristics – represented here as values of z and costs k_V), in the opportunities for feedback that they offer, and in the extent to which politicians can use fear 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 predictions about emotional impact. 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 in the equilibrium are not met. Without accounting for the interplay of strategic and psychological factors, blanket claims about how a particular emotion affects politics are difficult to reconcile with the logic.

Future research can further improve the applicability of research of politics and emotions. For example, we built our model from five relatively simple psychological premises. More refined theoretical treatments can come from deeper inquiries into factors such as response latency, activation potentials, and the kinds of appeals that are particularly likely to draw attention and gain a foothold in long-term memory. Experiments can also improve understanding. However, since political leaders are not easily recruited into participate in experiments, creativity is needed to evaluate implications of our model. For example, one design can 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 will better document citizen reactions and inhibitory mechanics in focal political contexts, which should yield a better understanding of when existing empirical and theoretical claims about the political impact of emotions are most relevant.

Conclusion

Emotions affect politics. Many political actors are strategic. Readers who believe these statements should be open to the idea that strategic decisions influence how emotions affect politics. In many cases, how emotions affect politics will be the product of interactions between subconscious phenomena and conscious adaptations to contextual incentives. That is why, in the case of the emotion upon which we focus here, we contend that its influence on specific political situations is best understood as not just the product of a stimulus-response relationship, but also as consequence of an equilibrium of fear.

Proof of Proposition 1

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 in the second period regardless of his actions. In this case, $U_2(M_2=S_2)=c_2$ and $U_2(M_2\neq S_2)=c_2-k_P$. Now consider the case $F=0$. Here, inhibition succeeded and the citizen's response is independent of the politician's decision. Hence, $U_2(M_2=S_2)=U_2(M_2\neq S_2)-k_P$. Since $k_P>0$, the politician's best response if $s\geq.5$ or $F=0$ 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. If this decision node is reached, it is the final move 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 $s<.5$, 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 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 reaction is emotional, non-strategic, and affects her support of policy.	The citizen may receive feedback about her reaction.	If she learns that her reaction led her to support a bad policy, she can try to inhibit future reactions.	An inhibition attempt (e.g., therapy) 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 is emotional, non-strategic, and affects her support of policy. It can also depend on her inhibition attempt. **The game ends.**

Figure 1. Timeline.

Figure 2. The Extensive Form of Period 1

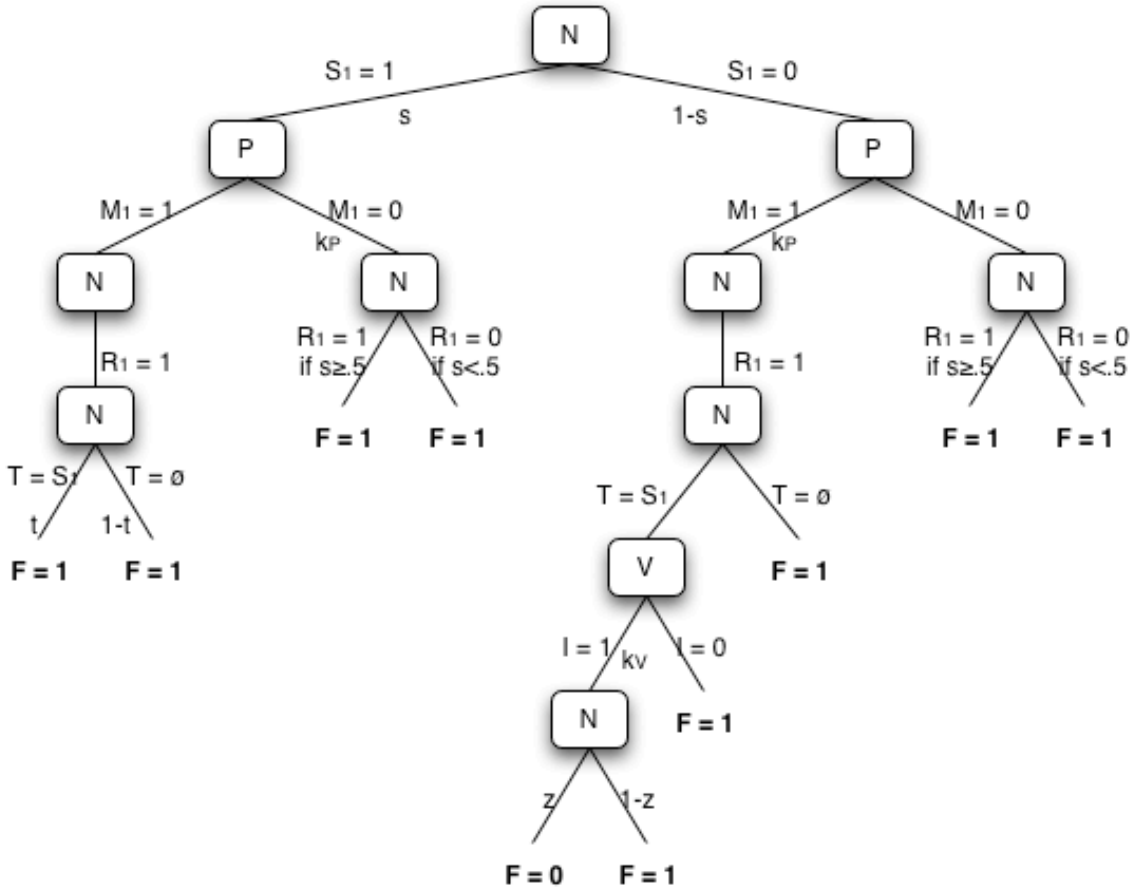
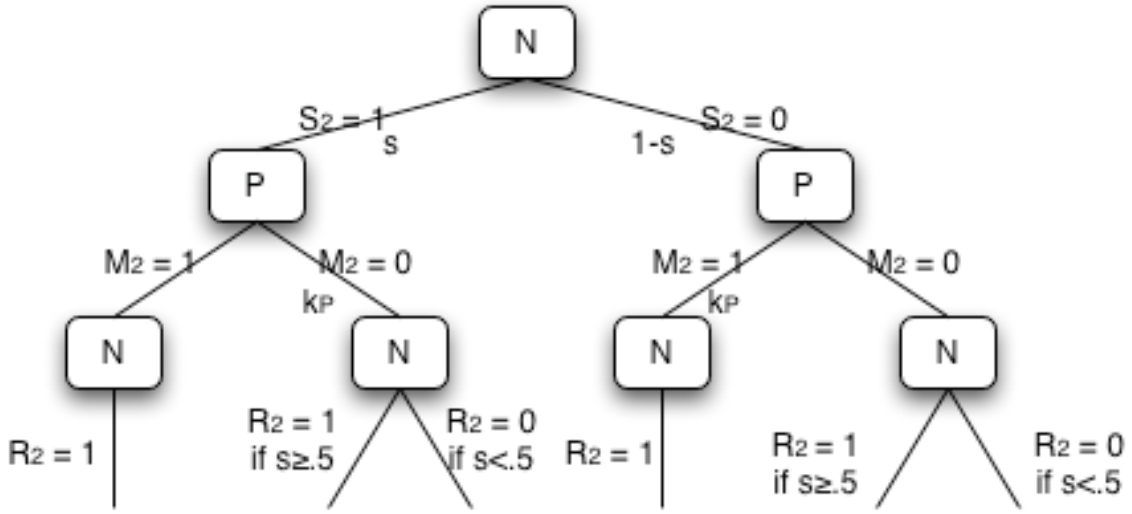


Figure 3. The Extensive Forms of Period 2

If *F=1*



If *F=0*

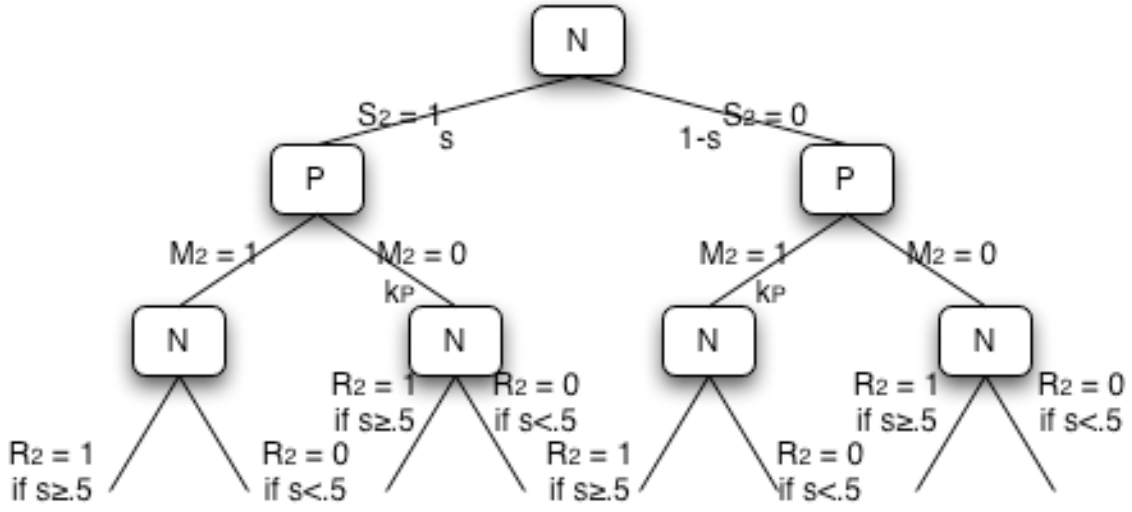


Figure 4. "Can the Politician Scare the Citizen Into Supporting a Bad Policy?"

For the case where a fear message would be unwarranted and $c_2>k_P$ and …	$zx_2(1-s) \leq k_V$ Inhibition unlikely to succeed and costly to attempt	$zx_2(1-s) > k_V$ Inhibition likely to succeed with low-cost "therapy"
$c_1>k_P + tz(c_2-(1-s)k_P)$ Benefit from citizen support high relative to exogenous reputation costs The politician considers feedback & citizen behavioral adjustments to be unlikely	**YES**	**YES**
Interim relationship between support benefit and exogenous costs. The politician considers feedback likely & behavioral adjustments possible	**YES**	**NO**
$c_1<k_P$ Benefit from citizen support low relative to exogenous costs.	**NO**	**NO**

⇐ CITIZEN-EMOTION DIMENSION ⇒

⇐ POLITICIAN-STRATEGY DIMENSION ⇒