Media Effects on Policy Choice*

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I am persuaded myself that the good sense of the people will always be found to be the best army. They may be led astray for a moment, but will soon correct themselves. The people are the only censors of their governors: and even their errors will tend to keep these to the true principles of their institution. To punish these errors too severely would be to suppress the only safeguard of the public liberty. The way to prevent these irregular interpositions of the people is to give them full information of their affairs thro' the channel of the public papers, & to contrive that those papers should penetrate the whole mass of the people. The basis of our governments being the opinion of the people, the very first object should be to keep that right; and were it left to me to decide whether we should have a government without newspapers or newspapers without a government, I should not hesitate a moment to prefer the latter.

Thomas Jefferson, 1787 letter to Edward Carrington

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1 Introduction

What is the role of the media in a democracy? Jefferson suggests one possible, and important role – to educate the public about the merits of particular policy choices. Since politicians in a democracy are accountable to voters, it is important that the public be well-informed, lest the government respond to mistaken voter impulses. Thus, as Jefferson notes, the media may be crucial to the functioning of a democracy.

We develop a formal model to analyze this claim. In the model, politicians are accountable to voters who are potentially misinformed about their true interests; in Jefferson's terms it is possible that "the opinion of the people" is not right. Elected officials in our model have better information than voters do about optimal policy choices, and thus may have an incentive to pander to public opinion if voters misperceive their interests.

We first present a baseline model in which no media is present, and then extend the model to examine policy choice in the presence of a media. The media observes the incumbent's behavior, receives a private signal about whether the incumbent's policy choice was correct, and then makes a statement about whether its signal indicates that the incumbent chose the correct policy. We examine two variants of the model, with different types of media. First is a nonstrategic media, which always truthfully reports its private information directly to the public. The nonstrategic media is thus essentially equivalent to a publicly observable signal. Second is a strategic media that seeks to avoid making incorrect statements about whether the incumbent's policy choice served voters' interests.

In both media models, the media's statement is made before the next election and thus is relevant for voters' decision about whether to re-elect the incumbent. Incumbents, who are electorally-motivated, anticipate the media's behavior. Thus the media plays a role in the process of holding incumbents accountable for their actions, and the prospect of media commentary can affect an incumbent's policymaking.

The key question we ask is how the existence of the media affects the incumbent politician's propensity to pander. A reasonable ex ante conjecture, building on the intuition expressed by

Jefferson, is that since the media gives voters information about whether the policy chosen by an incumbent was truly in their best interests, politicians will have less incentive to pander in the presence of a media. We address the following specific questions.

1. Does the existence of the media reduce pandering, compared to a baseline no-media model?

   - It reduces or eliminates pandering some of the time. However, surprisingly, there are also situations where the incumbent would not pander in the baseline no-media model, but will pander in the model with a media.

2. Under what circumstances is the media most effective in reducing pandering?

   - In the model with a nonstrategic media, which truthfully reports its signal to the public, pandering is completely eliminated when the "race" between the incumbent and challenger is close. This is surprising, since close races are when pandering is most prevalent in the baseline no-media model.

3. Does it matter whether the media is strategic?

   - The results of the model are different for a strategic versus nonstrategic media.

4. Is a strategic media biased towards being a "yes man" in the sense of supporting the incumbent's policy choice?

   - The media is a *partial yes man.* A low quality media will have a pro-incumbent bias; if it observes information indicating that the incumbent chose the wrong policy it will instead report that the incumbent chose the correct policy. But the media is not a complete yes man, since a high quality media will truthfully report information indicating that the incumbent made a bad policy choice.
   - The fact that the low-quality media is a yes man also affects the information that the voter is able to glean from the media's announcement. In particular, if the media states

that the incumbent chose the wrong policy, then the voter knows that the media is high quality and received compelling information indicating that the incumbent chose the wrong policy.

5. Is a strategic media less effective than a non-strategic (truthful) media in reducing pandering?

   - Surprisingly, in certain circumstances the strategic media is *more* effective than the truthful media in reducing pandering. This may seem odd, given that the strategic media is a partial yes man. However, the yes man behavior is actually the key to the result, since it removes the incumbent's incentive to pander based on potential media reactions, while maintaining his incentive to choose the correct policy and avoid being caught by a high quality media that observes when he chose the wrong policy.

Several of these results are counter-intuitive, since they imply that more information does not necessarily improve accountability. In our model, perfect information is *best,* i.e., if voters always learn whether an incumbent's policy choice was correct before the election then incumbent never has an incentive to pander. But an informative yet noisy signal is not always a good thing. Obviously the potential for errors may make information less useful in reducing an incumbent's incentives to pander. Even worse, the potential for errors by the media can also give the incumbent an incentive to pander.

2 Sequence

We examine three models: a baseline model with no media, a model with a nonstrategic media that truthfully reports its signal, and a model with a strategic media that may choose to misreport its signal. For each variant we use the same basic timeline.

1. Nature chooses state of the world $\omega \in \{A, B\}$. With probability $\pi > 1/2$, $\omega = A$.

2. Incumbent quality, high or low, is drawn: $I \in \{H, L\}$, with $\Pr(I = H) = \kappa_I \in (0, 1)$.

Challenger quality is drawn: $C \in \{H, L\}$, with $\Pr(C = H) = \kappa_C \in (0,1)$. Each actor's quality is his own private information.

3. Incumbent sees signal $s_I \in \{A, B\}$. A high quality incumbent always sees $s_I = \omega$, whereas a low quality incumbent sees $s_I = \omega$ with probability $q \in (\pi, 1)$.

4. Incumbent picks policy $x_I \in \{A, B\}$. This policy choice is observed by the media and by voters.

5. Media (in the model variants with a media) observes signal $s_M \in \{A, B\}$ and makes policy announcement $x_M \in \{A, B\}$. The media is either high quality, in which case it observes the true state of the world with probability 1, or low quality, in which case it observes the true state of the world with probability q. Let $\kappa_M \in (0,1)$ be the probability that the media is high quality.

6. With probability ρ, the voter observes the true state of world ω. With probability $1 - \rho$ uncertainty does not resolve and the voter must vote knowing only x_I (and x_M in the variants with a media).

7. Election. Voter re-elects or removes incumbent.

Preferences

The incumbent is purely election motivated, getting utility 1 if re-elected and 0 otherwise. A single representative voter decides whether to re-elect the incumbent, based on her posterior belief μ about the probability that he is high quality: if $\mu > \kappa_C$ she re-elects, if $\mu < \kappa_C$ then she removes the incumbent, and if $\mu = \kappa_C$ then she can mix.

We don't need to specify preferences for a nonstrategic media, which simply reports its signal, i.e., $x_M = s_M$. The strategic media seeks to avoid making public statements that later prove to be incorrect. It knows that in the long run the public will eventually observe the success or failure of a policy, so it chooses x_M to maximize the probability that its announcement is correct. Since, in addition to its own signal s_M, the media observes the incumbent's policy choice x_I, which tells it something about ω, this means that in some circumstances the strategic media will *not* announce $x_M = s_M$.

3 Baseline model with no media

The baseline model is a simplified variant of Canes-Wrone, Herron, and Shotts (2001). Equilibria are shown in Figure 1. The easiest way to summarize equilibria is to examine conditions under which there can exist a *perfect accountability equilibrium* in which the incumbent always follows his signal, choosing $x_I = s_I$ regardless of his type. When there does not exist a perfect accountability equilibrium, we find an equilibrium involving pandering by the incumbent. In an equilibrium with pandering, a high quality incumbent always chooses the policy that matches his signal, $x_I = s_I$, as does a low quality incumbent whose signal agrees with the voter's prior belief that $\omega = A$ is the more likely state of the world. A low quality incumbent who sees $s_I = B$ mixes, sometimes playing $x_I = B$ but sometimes playing $x_I = A$. The exact mixed strategy, as well as voter mixed strategies in pandering equilibria, are stated in the appendix.

In the main text we focus simply on the question of whether a perfect accountability equilibrium exists. To do this, we use the following cutpoints. For a low quality incumbent's beliefs when he observes $s_I = B$ we use the notation $\lambda_B \equiv \Pr(\omega = A | s_I = B) = \frac{\pi q}{\pi q + (1-\pi)(1-q)}$.

Definition 1 *Cutpoints for baseline model.*

- $\bar{\mu}_{\substack{x_I = B \\ \omega = \phi}} \equiv \frac{\kappa_I(1-\pi)}{\kappa_I(1-\pi) + (1-\kappa_I)[(1-\pi)q + \pi(1-q)]}$
- $\bar{\mu}_{\substack{x_I = A \\ \omega = \phi}} \equiv \frac{\kappa_I \pi}{\kappa_I \pi + (1-\kappa_I)[\pi q + (1-\pi)(1-q)]}$
- $\bar{\rho} \equiv \frac{1}{2(1-\lambda_B)}$

The $\bar{\mu}$ cutpoints are voter beliefs about the probability that the incumbent is high quality after an incumbent who is playing the strategy of always following its signal chooses a policy x_I and uncertainty does not resolve, denoted $\omega = \phi$. For example, with probability κ_I the incumbent is high quality and with probability $(1-\pi)$ the state of the world is $\omega = B$, in which case the incumbent observes $s_I = B$. With probability $(1 - \kappa_I)$ the incumbent is low-quality, and a low quality incumbent observes signal $s_I = B$ with probability q when $\omega = B$ and with probability $(1 - q)$ when $\omega = A$. Thus if the voter knows that the incumbent is playing the strategy of choosing $x_I = s_I$ always, and the incumbent's policy choice is $x_I = B$, the voter's belief about the probability that he is high quality is $\bar{\mu}_{\substack{x_I=B \\ \omega=\phi}} \equiv \frac{\kappa_I(1-\pi)}{\kappa_I(1-\pi)+(1-\kappa_I)[(1-\pi)q+\pi(1-q)]}$. By similar reasoning her belief about the probability that he is high quality if he chooses $x_I = A$ is $\bar{\mu}_{\substack{x_I=A \\ \omega=\phi}} \equiv \frac{\kappa_I\pi}{\kappa_I\pi+(1-\kappa_I)[\pi q+(1-\pi)(1-q)]}$.

It is straightforward to show that $\bar{\mu}_{\substack{x_I=B \\ \omega=\phi}} < \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$, since $\pi > 1/2$, i.e., A is the more likely state of the world. This inequality drives pandering in the baseline model, since if uncertainty is not resolved the voter will think more highly of an incumbent who chose $x_I = A$ than one who chose $x_I = B$.

We can now state our first result, which summarizes equilibria in the baseline model. Additional details of the equilibria are in the appendix.

Proposition 1 *In the baseline model there is an equilibrium.*

1. *If* $\kappa_C < \bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve.*

2. *If* $\kappa_C \in \left(\bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}, \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}\right)$ *then there is a perfect accountability equilibrium if* $\rho \geq \bar{\rho}$*. In this equilibrium, the voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$ *or if uncertainty does not resolve and* $x_I = B$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve and* $x_I = A$*. If* $\rho < \bar{\rho}$ *there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering.*

3. *If* $\kappa_C > \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent unless uncertainty resolves and* $x_I = \omega$*. For sufficiently high* κ_C *the voter won't re-elect the incumbent even if* $x_I = \omega$*, but* $x_I = s_I$ *is still optimal since the incumbent's policy choice doesn't affect his prospects for re-election.*

In the first part of the proposition, challenger quality κ_C is sufficiently low relative to incumbent quality so that even if the incumbent chooses the policy option that goes against the voter's prior belief, i.e., $x_I = B$, he will win if uncertainty doesn't resolve. For this equilibrium, the voter's belief about the probability that the incumbent is high quality must be greater than κ_C, given truthful incumbent behavior, in the information set where $x_I = B$ and uncertainty isn't resolved ($\omega = \phi$), i.e., $\bar{\mu}_{\substack{x_I=B \\ \omega=\phi}} > \kappa_C$.

In the perfect accountability equilibrium in the second part of the proposition, challenger quality κ_C is close to incumbent quality κ_I, so if uncertainty is not resolved and the incumbent chooses B he loses (since $\kappa_C > \bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}$) but if he chooses A he wins (since $\kappa_C < \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$). This means that the incumbent has an incentive to pander, i.e., to choose $x_I = A$ when $s_I = B$. However, if uncertainty resolves, the incumbent wins re-election if and only if $x_I = \omega$, which pandering less attractive. For a perfect accountability equilibrium, pandering not be optimal, i.e., the probability of uncertainty resolution ρ must be sufficiently high to induce a low quality incumbent to follow his signal when $s_I = B$:

$$\begin{aligned} EU(x_I = B|s_I = B, I = L) &\geq EU(x_I = A|s_I = B, I = L) \\ \rho\,(1 - \lambda_B) &\geq (1 - \rho) + \rho\lambda_B \\ \rho &\geq \frac{1}{2(1 - \lambda_B)} \equiv \bar{\rho}. \end{aligned}$$

In the third part of the proposition, challenger quality is sufficiently high relative to incumbent quality so that incumbent can only win if uncertainty resolves and $x_I = \omega$. For this equilibrium, the voter's belief about the probability that the incumbent is high quality must be less than κ_C when $x_I = A$ and uncertainty is not resolved, i.e., $\bar{\mu}_{\substack{x_I=A \\ \omega=\phi}} < \kappa_C$. This inequality ensures that the incumbent has no incentive to pander, since if he chooses $x_I = A$ he won't win re-election if uncertainty does not resolve.

4 Model with non-strategic media

Suppose the media always truthfully reports $x_M = s_M$. Let the media's probability of getting the correct signal be $q^M \equiv \Pr(s_M = \omega) = \kappa_M + (1-\kappa_M)\, q$, where κ_M is the probability that the media is high quality and q is the probability that $s_M = \omega$ for a low-quality media. Perfect accountability equilibria for the model are shown in Figure 2. The equilibria use the following cutpoints.

Definition 2 *Cutpoints for nonstrategic media model.*

- $\tilde{\mu}_{\substack{x_I=B\\x_M=A}} \equiv \frac{\kappa_I(1-\pi)(1-q^M)}{\kappa_I(1-\pi)(1-q^M)+(1-\kappa_I)[\pi(1-q)q^M+(1-\pi)q(1-q^M)]}$
- $\tilde{\mu}_{\substack{x_I=A\\x_M=B}} \equiv \frac{\kappa_I\pi(1-q^M)}{\kappa_I\pi(1-q^M)+(1-\kappa_I)[\pi q(1-q^M)+(1-\pi)(1-q)q^M]}$
- $\tilde{\mu}_{\substack{x_I=B\\x_M=B}} \equiv \frac{\kappa_I(1-\pi)q^M}{\kappa_I(1-\pi)q^M+(1-\kappa_I)[\pi(1-q)(1-q^M)+(1-\pi)qq^M]}$
- $\tilde{\mu}_{\substack{x_I=A\\x_M=A}} \equiv \frac{\kappa_I\pi q^M}{\kappa_I\pi q^M+(1-\kappa_I)[\pi qq^M+(1-\pi)(1-q)(1-q^M)]}$
- $\tilde{\rho} \equiv \frac{1-\Pr(s_M=B|s_I=B,I=L)}{2(1-\lambda_B)-\Pr(s_M=B|s_I=B,I=L)}$

The $\tilde{\mu}$ cutpoints are voter beliefs about the probability that the incumbent is high quality given x_I and x_M and given that the incumbent always plays $x_I = s_I$ and the media always truthfully reports $x_M = s_M$. For example, $\tilde{\mu}_{\substack{x_I=B\\x_M=A}}$ is derived as follows:

With probability κ_I the incumbent is high quality, in which case he chooses $x_I = B$ if and only if $\omega = B$, which occurs with probability $(1-\pi)$. The probability that the nonstrategic media plays A is simply the probability that it observes $s_M = A$, which is $(1-q^M)$ when $\omega = B$. This gives the numerator and first term of the denominator: $\kappa_I\,(1-\pi)\,(1-q^M)$.

With probability $(1-\kappa_I)$ the incumbent is low quality. In this case there are two ways that the voter can observe $x_I = B$ and $x_M = A$. First, with probability π, $\omega = A$ in which case $x_I = B$ if and only if the incumbent's signal is incorrect, which occurs with probability $(1-q)$ for a low quality incumbent, and $x_M = A$ if and only if the media's signal is correct, which occurs with probability q^M. Second, with probability $(1-\pi)$, $\omega = B$ and the incumbent's signal is correct with probability q whereas the media's signal is incorrect with probability $(1-q^M)$. This gives the second term of the denominator: $(1-\kappa_I)\left[\pi(1-q)\,q^M + (1-\pi)\,q(1-q^M)\right]$. The derivations for the other $\tilde{\mu}$ cutpoints are similar.

We can now summarize equilibria for the non-strategic media model.

Proposition 2 *In the nonstrategic media model there is an equilibrium.*

1. *If* $\kappa_C < \tilde{\mu}_{\substack{x_I=B \\ x_M=A}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$*. Otherwise the voter re-elects the incumbent.*

2. *If* $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=B \\ \omega=A}}, \tilde{\mu}_{\substack{x_I=A \\ \omega=B}}\right)$ *then there is a perfect accountability equilibrium if* $\rho \geq \tilde{\rho}$*. In this equilibrium, the voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$ *or if uncertainty does not resolve and* $x_I = B$ *but* $x_M = A$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$*, or if uncertainty does not resolve and* $x_I = A$ *but* $x_M = B$*, or if uncertainty does not resolve and* $x_I = x_M$*. If* $\rho < \tilde{\rho}$ *there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering.*

3. *If* $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=A \\ \omega=B}}, \tilde{\mu}_{\substack{x_I=B \\ \omega=B}}\right)$ *then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$ *or if uncertainty does not resolve and* $x_I \neq x_M$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve and* $x_I = x_M$*.*

4. *If* $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=B \\ \omega=B}}, \tilde{\mu}_{\substack{x_I=A \\ \omega=A}}\right)$ *then there is a perfect accountability equilibrium if* $\rho \geq \tilde{\rho}$*. In this equilibrium, the voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$*, or if uncertainty does not resolve and* $x_I = x_M = B$ *or* $x_I \neq x_M$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$*, or if uncertainty does not resolve and* $x_I = x_M = A$*. If* $\rho < \tilde{\rho}$ *there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering.*

5. *If* $\kappa_C > \tilde{\mu}_{\substack{x_I=A \\ \omega=A}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent unless uncertainty resolves and* $x_I = \omega$*. For sufficiently high* κ_C *the voter won't re-elect the incumbent even if* $x_I = \omega$*, but* $x_I = s_I$ *is still optimal.*

In the first part of the proposition, challenger quality is sufficiently low so that regardless of what policy the incumbent chooses and what the media says about this policy, the incumbent wins unless uncertainty resolves and the public sees that $x_I \neq \omega$. For this equilibrium, challenger quality must be worse than the voter's belief about the incumbent after he chooses the ex-ante less-likely-to-be-good policy $x_I = B$ and the media declares that this is the wrong policy choice, i.e., $\kappa_C < \tilde{\mu}_{\substack{x_I=B \\ x_M=A}}$.

In the second part of the proposition, challenger quality κ_C is fairly low. In the perfect accountability equilibrium for this region, if the incumbent chooses $x_I = A$ and the media announces that this policy is incorrect, i.e., $x_M = B$, the incumbent wins if uncertainty does not resolve. But if the incumbent chooses $x_I = B$ and the media announces that this policy is incorrect, i.e., $x_M = A$, the incumbent loses if uncertainty does not resolve. The reason for this asymmetry between $x_I = A$ and $x_I = B$ is that the prior probability that $\omega = A$ is strictly greater than 1/2, so $\tilde{\mu}_{\substack{x_I=B \\ \omega=A}} < \tilde{\mu}_{\substack{x_I=A \\ \omega=B}}$.

This voter behavior gives the incumbent an incentive to pander and choose $x_I = A$ when $s_I = B$. (Note, in this region if $x_M = x_I$ the incumbent wins regardless of whether x_I is A or B, so if $x_I = A$ the incumbent always wins when uncertainty does not resolve). However, this incentive is counteracted by the fact that if uncertainty resolves, then the incumbent wins if and only if $x_I = \omega$. So we have a cutpoint for the probability of uncertainty resolution such that if ρ is sufficiently high, a perfect accountability equilibrium exists. Specifically, a low quality incumbent who sees $s_I = B$ must must weakly prefer to follow his signal:

$$\begin{aligned} EU(x_I = B|s_I = B, I = L) &\geq EU(x_I = A|s_I = B, I = L) \\ \rho\,(1-\lambda_B) + (1-\rho)\Pr(s_M = B|s_I = B, I = L) &\geq \rho\lambda_B + (1-\rho) \\ \rho &\geq \frac{1 - \Pr(s_M = B|s_I = B, I = L)}{2(1-\lambda_B) - \Pr(s_M = B|s_I = B, I = L)} \equiv \tilde{\rho}. \end{aligned}$$

In the third part of the proposition, challenger quality is close to incumbent quality. If uncertainty does not resolve, the race will be determined by whether the media says the incumbent's policy choice was correct. Since the media is more likely to report $x_M = \omega$ than $x_M \neq \omega$, the incumbent has an incentive to follow her signal and choose $x_I = s_I$. If uncertainty does resolve, the race will be determined by whether $x_I = \omega$, and this also gives the incumbent an incentive to choose $x_I = s_I$. This equilibrium holds for any ρ as long as $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=A \\ x_M=B}}, \tilde{\mu}_{\substack{x_I=B \\ x_M=B}}\right)$.

The fourth part of the proposition is similar to the second part, except that the challenger is ahead of the incumbent, so if uncertainty doesn't resolve the incumbent can only win if $x_I = A$ and $x_M = A$. The $\tilde{\rho}$ cutpoint is the same as for part 2 of the proposition.

In the fifth part of the proposition, the incumbent can only win if uncertainty resolves and $x_I = \omega$.

Comparing the models

- The $\tilde{\rho}$ cutpoint for the nonstrategic media model is lower than the $\bar{\rho}$ cutpoint for the baseline model, i.e., in the presence of a nonstrategic media it's easier for the possibility of uncertainty resolution to loom large enough to eliminate pandering. The reason for this is that the benefits of pandering when uncertainty does not resolve in the nonstrategic media model depend on the media's action. For example, in part 2 of Proposition 2, if the media reports $x_M = B$ and uncertainty does not resolve then the incumbent wins re-election regardless of whether he chose $x_I = A$ or $x_I = B$, since in this region $\kappa_C < \tilde{\mu}_{\substack{x_I=A \\ x_M=B}}$ and $\kappa_C < \tilde{\mu}_{\substack{x_I=B \\ x_M=B}}$. So pandering only makes a difference here if $x_M = A$ and uncertainty does not resolve. In contrast, in part 2 of Proposition 1 for the baseline model, the electoral benefits of pandering accrue any time uncertainty does not resolve.

- When the race is very close, i.e., $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=A \\ x_M=B}}, \tilde{\mu}_{\substack{x_I=B \\ \omega=B}}\right)$, there is a perfect accountability equilibrium in the nonstrategic media model. This stands in sharp contrast to the baseline model, where it turns out (see first proposition in appendix for details) that pandering is most prevalent, in the sense that the rate of pandering by a low-quality incumbent in his mixed strategy when $s_I = B$ is highest, when the race is extremely close between the incumbent and challenger. Why is pandering eliminated here? As noted in the discussion of part 3 of Proposition 2, if uncertainty is not resolved the incumbent wants to choose the policy that will be favorably evaluated by the media, and since the media's signal tends to be correct, this means the incumbent has an incentive to choose the policy that he thinks is most likely correct. In contrast, in the baseline model, if uncertainty is not resolved the incumbent has an incentive to choose the policy that the voters believe is correct, i.e., he has an incentive to pander.

- It's straightforward to show that $\tilde{\mu}_{\substack{x_I=B \\ x_M=A}} < \bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}$ and $\tilde{\mu}_{\substack{x_I=A \\ x_M=A}} > \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$. This means that there exist parameter values, e.g., $\rho < \tilde{\rho}$ and $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=B \\ x_M=A}}, \bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}\right)$, for which pandering occurs in the media model but *not* in the baseline model. Why does this happen? In this example the incumbent is pretty far ahead of the challenger. In the baseline model, he knows that even if he chooses $x_I = B$, he will not be removed if uncertainty does not resolve, since $\kappa_C < \bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}$. In the media model, in contrast, he knows that if he chooses $x_I = B$ and the media announces $x_M = A$, then he will lose office. Thus he has an incentive to pander. A media that dutifully reports the information that it observes doesn't always promote better policy-making. In this circumstance it actually makes things worse.

5 Model with strategic media

What happens if rather than simply reporting $x_M = s_M$, the media strategically picks its announcement $x_M \in \{A, B\}$ to maximize the probability that $x_M = \omega$? This is a reasonable model of a media that wants to avoid mistakenly reporting policy information that turns out to be erroneous in the long run.

Our model is related to, yet different from, Gentzkow and Shapiro's (2006) model in which the media biases its statements towards citizens' prior beliefs. Our media, in contrast, is biased towards reporting that the incumbent chose the correct policy, since the incumbent's policy choice reveals information about the true state of the world ω. A low-quality media knows that the incumbent, who may be either high or low quality, generally has better information than it has.

If the incumbent's equilibrium strategy is to follow his signal and always pick $x_I = s_I$, then if $x_I = A$ a low quality media will always believe that A is the more likely state of the world, even when its own private signal is $s_M = B$. Things are a bit more complicated when $x_I = B$, since B

is the ex ante less likely state of the world. For a low quality media to believe that B is the more likely state of the world when $x_I = B$ and $s_M = A$ we need

$$\begin{aligned} \lambda_{BA} \equiv \Pr(\omega = A | x_I = B, s_M = A) &\leq 1/2 \\ \frac{\pi (1-\kappa_I)(1-q) q}{\pi (1-\kappa_I)(1-q) q + (1-\pi)(\kappa_I + (1-\kappa_I) q)(1-q)} &\leq 1/2 \\ \kappa_I &\geq \frac{q (2\pi - 1)}{q (2\pi - 1) + (1-\pi)}. \end{aligned}$$

This condition ensures that the incumbent is sufficiently likely to be high quality, and hence surely correct in its policy choice, to induce a low-quality media to be a yes man even when the incumbent's policy choice goes against the voter's prior belief about which policy is more likely to be correct.

Assumption 1 $\kappa_I \geq \frac{q(2\pi-1)}{q(2\pi-1)+(1-\pi)}$.

In the remainder of this section we always use this assumption. We have fully characterized perfect accountability equilibria under this assumption, along with mixed strategy pandering equilibria for situations where there is no perfect accountability equilibrium, but we have not worked out equilibria when the assumption does not hold. Equilibria for the model, under this assumption, are summarized in Figure 3, and use the following cutpoints.

Definition 3 *Cutpoints for the strategic media model.*

- $\hat{\mu}_{\substack{x_I=B \\ x_M=B}} \equiv \frac{\kappa_I(1-\pi)}{\kappa_I(1-\pi)+(1-\kappa_I)[(1-\pi)q+\pi(1-q)(1-\kappa_M)]}$
- $\hat{\mu}_{\substack{x_I=A \\ x_M=A}} \equiv \frac{\kappa_I \pi}{\kappa_I \pi+(1-\kappa_I)[\pi q+(1-\pi)(1-q)(1-\kappa_M)]}$
- $\hat{\rho} \equiv \frac{1-\kappa_M(1-\lambda_B)}{2(1-\lambda_B)-\kappa_M(1-\lambda_B)}$

The first two cutpoints are voter beliefs about the incumbent's quality, given that the incumbent plays $x_I = s_I$ and the challenger is a partial yes man.

Proposition 3 *In the strategic media model there is an equilibrium.*

1. *If* $\kappa_C < \hat{\mu}_{\substack{x_I=B \\ x_M=B}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$*, or if uncertainty does not resolve and* $x_I \neq x_M$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$*, or if uncertainty does not resolve and* $x_I = x_M$*.*

2. *If* $\kappa_C \in \left(\hat{\mu}_{\substack{x_I=B \\ x_M=B}}, \hat{\mu}_{\substack{x_I=A \\ x_M=A}}\right)$ *then there is a perfect accountability equilibrium if* $\rho \geq \hat{\rho}$*. In this equilibrium, the voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$*, or if uncertainty does not resolve and* $x_I \neq x_M$ *or* $x_I = x_M = B$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$*, or if uncertainty does not resolve and* $x_I = x_M = A$*. If* $\rho < \hat{\rho}$ *there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering.*

3. *If* $\kappa_C > \hat{\mu}_{\substack{x_I=A \\ x_M=A}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent unless uncertainty resolves and* $x_I = \omega$*. For sufficiently high* κ_C *the voter won't re-elect the incumbent even if* $x_I = \omega$*, but we can still have* $x_I = s_I$ *in equilibrium.*

In the first part of the proposition, challenger quality is sufficiently low relative to incumbent quality so that if the incumbent chooses $x_I = B$ and the media announces $x_M = B$ the incumbent wins if uncertainty doesn't resolve. This requires the voter's belief about the probability that the incumbent is high quality to be greater than κ_C, given that the incumbent always sets $x_I = s_I$, in the information set where $x_I = B$ and the media announces $x_M = B$, i.e., $\hat{\mu}_{\substack{x_I=B \\ x_M=B}} > \kappa_C$.

Note that $\hat{\mu}_{\substack{x_I=B \\ x_M=B}}$ differs from $\bar{\mu}_{\substack{x_I=B \\ x_M=\phi}}$ in the baseline no-media model, since there is a $(1-\kappa_M)$ in the last term in the denominator for $\hat{\mu}_{\substack{x_I=B \\ x_M=B}}$. This $(1-\kappa_M)$ stems from the fact that if the media is high quality (which is the case with probability κ_M) and the state of the world is $\omega = A$ then the media would not announce $x_M = B$ but instead would announce $x_M = A$.

In the perfect accountability equilibrium in the second part of the proposition, if uncertainty is not resolved and the incumbent chooses $x_I = B$ he loses even if the media says that this is the correct policy, i.e., $x_M = B$. However in this region the incumbent wins if he chooses $x_I = A$ and $x_M = A$. This gives the incumbent an incentive to pander, as long as the probability of uncertainty resolution is sufficiently low. If the probability of uncertainty resolution is high, in contrast, he will not have an incentive to pander, i.e., there can be a perfect accountability equilibrium if and only if the incumbent maximizes his probability of re-election by choosing $x_I = B$ when $s_I = B$:

$$
\begin{aligned}
EU(x_I = B | s_I = B, I = L) &\geq EU(x_I = A | s_I = B, I = L) \\
\rho (1 - \lambda_B) &\geq (1 - \rho) [\kappa_M \lambda_B + (1 - \kappa_M)] + \rho \lambda_B \\
\rho &\geq \frac{1 - \kappa_M (1 - \lambda_B)}{2(1 - \lambda_B) - \kappa_M (1 - \lambda_B)} \equiv \hat{\rho}.
\end{aligned}
$$

In the third part of the proposition, challenger quality is sufficiently high relative to incumbent quality so that incumbent can only win if uncertainty resolves and $x_I = \omega$. This requires that the voter's belief about the incumbent be lower than her belief about the challenger, even if the incumbent chooses the ex ante more likely correct policy $x_I = A$ and the media announces that the incumbent's policy choice was correct, i.e., $\hat{\mu}_{\substack{x_I = A \\ x_M = A}} < \kappa_C$.

Interpretation

The strategic media model is interesting for several reasons. First, if the media is low quality then it is a complete yes man, in the sense that it always says that the incumbent chose the correct policy. A high-quality media, in contrast, is not a yes man but rather reports $x_M = s_M$. Taken as a whole, the media, which can be either high or low quality, is thus a partial yes man.

We would intuitively think that a partial yes man media is worse than a nonstrategic media that truthfully reports its signal. In one sense this is true. If we compare the three ρ cutpoints, we see that the strategic media cutpoint is between the cutpoint in the baseline model and the cutpoint in the nonstrategic media model, i.e., $\bar{\rho} > \hat{\rho} > \tilde{\rho}$. [The specifics of the math are as follows: $\bar{\rho} \equiv \frac{1}{2(1-\lambda_B)}$, $\hat{\rho} \equiv \frac{1-\kappa_M(1-\lambda_B)}{2(1-\lambda_B)-\kappa_M(1-\lambda_B)}$, and $\tilde{\rho} \equiv \frac{1-\Pr(s_M = B | s_I = B, I = L)}{2(1-\lambda_B)-\Pr(s_M = B | s_I = B, I = L)}$. And $0 < \kappa_M(1 - \lambda_B) < \Pr(s_M = B | s_I = B, I = L)$. The latter inequality holds since $\kappa_M(1 - \lambda_B) = \Pr(\omega = B$ and $s_M = B | s_I = B, I = L)$]. This fits with the intuition that the more honest the media is in reporting its signal the more beneficial will be the effects on policy choice. Thus if we focus solely on the probability of uncertainty resolution, we find that the set of ρ values for which pandering is possible is smallest for the nonstrategic media model, intermediate for the strategic "partial yes man" media model, and largest for the baseline no media model.

However by focusing solely on ρ we would miss part of the story, since the equilibrium also depends on challenger quality, κ_C. It turns out that there are some κ_C values for which pandering can occur in the nonstrategic media model but not in the strategic media model. Specifically, $\left(\tilde{\mu}_{\substack{x_I=B\\ \omega=A}}, \tilde{\mu}_{\substack{x_I=A\\ \omega=B}}\right) \cup \left(\tilde{\mu}_{\substack{x_I=B\\ \omega=B}}, \tilde{\mu}_{\substack{x_I=A\\ \omega=A}}\right)$ from Proposition 2 is neither a strict superset nor a strict subset of $\left(\hat{\mu}_{\substack{x_I=B\\ x_M=B}}, \hat{\mu}_{\substack{x_I=A\\ x_M=A}}\right)$ from Proposition 3. Thus, at least some of the time a partial yes man media actually makes things *better* than a nonstrategic media that truthfully reports $x_M = s_M$.

This is not what we expected ex ante. But it actually makes sense. The problem with the nonstrategic media is that the incumbent fears that a low-quality media will criticize him, thereby causing him to lose office. If the low quality media is a yes man this problem is removed, but the incumbent still faces the disciplining effects of potential criticism from the high quality, accurate, media that reports the true state of the world after he has chosen the wrong policy. Thus he wants to pick the policy that maximizes the probability that $x_I = \omega$, and he has no incentive to pander.

One additional interesting result is that if the media is sufficiently likely to be high quality, specifically $\kappa_M > \frac{2\pi-1}{\pi}$, then $\hat{\mu}_{\substack{x_I=B\\ x_M=B}} > \kappa_I$, i.e., if the incumbent always chooses $x_I = s_I$ then when $x_I = B$ and $x_M = B$ the voter's belief about the incumbent's probability of being high quality goes up from the prior κ_I for incumbent quality. And since, as shown in Proposition 3, challenger quality κ_C must be greater than $\hat{\mu}_{\substack{x_I=B\\ x_M=B}}$ to get pandering in the strategic media model, this means that there can be no pandering unless $\kappa_C > \kappa_I$. Given that most of the time incumbents are more likely than challengers to be high quality, due to selection effects of repeated elections (Ashworth and Bueno De Mesquita 2006), this means that as long as the media is sufficiently likely to be high quality, a "partial yes man" strategic media will do a great job of eliminating pandering. A nonstrategic media, in contrast, will fail to eliminate pandering for some $\kappa_C < \kappa_I$ since there is pandering when $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=B\\ \omega=A}}, \tilde{\mu}_{\substack{x_I=A\\ \omega=B}}\right)$ and $\tilde{\mu}_{\substack{x_I=A\\ \omega=B}} < \kappa_I$.

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Note; B&P and Carp are only ones that discuss media effects on policy outcomes.

Media effects on the policy agenda, i.e., which issues political actors pay attention to. Edwards & Wood (*APSR 1999*) examine president's effect on media attention and vice versa.

Media effects on voters. A ton of literature on this. Possibilities. Ben Page *Who Deliberates?.* Page's intro & conclusion make some interesting related points. He's interested in how the media affects deliberation by generally-rational, if potentially ill-informed citizens. In his discussion it's obvious that he intuits that a sincere/truthful media is better than one that strategically distorts things. We don't have partisan distortion, of course, but we do have another type of distortion that he discusses – reliance on official sources for information, a.k.a. being a yes man.

Ole Holsti *Public Opinion and American Foreign Policy.*

6 Appendix

This appendix restates the three propositions from the main text, including additional details about mixed strategy equilibria for cases where perfect accountability equilibria do not exist. The appendix is somewhat rough.

Proposition 4 (details of equilibrium for baseline model) *In the baseline model there is an equilibrium.*

1. *If* $\kappa_C < \bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}$ *then there is a perfect accountability equilibrium. The incumbent always follows his signal,* $x_I = s_I$*. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve.*

    (a) *Details of voter beliefs in the equilibrium. If uncertainty resolves and* $x_I = \omega$ *the voter believes that the incumbent is high quality with probability* $\bar{\mu}_{\substack{x_I=A \\ \omega=A}} = \bar{\mu}_{\substack{x_I=B \\ \omega=B}} = \frac{\kappa_I}{\kappa_I + (1-\kappa_I)q} > \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$*. If uncertainty resolves and* $x_I \neq \omega$ *the voter believes that the incumbent is low quality with probability* 1 *since high quality incumbents always see* $s_I = \omega$*.*

2. *If* $\kappa_C \in \left(\bar{\mu}_{\substack{x_I=B \\ \omega=\phi}}, \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}\right)$ *then there is a perfect accountability equilibrium if* $\rho \geq \bar{\rho}$*. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$ *or if uncertainty does not resolve and* $x_I = B$*. The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve and* $x_I = A$*. If* $\rho < \bar{\rho}$ *there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering. Details of the equilibrium with pandering:*

    (a) *If* $\kappa_C < \kappa_I$

        i. *The incumbent plays* $x_I = s_I$ *with probability* 1 *except when the incumbent is low quality and* $s_I = B$*, in which case the incumbent plays* A *with probability* $\sigma = 1 - \frac{(1-\kappa_C)\kappa_I(1-\pi)}{\kappa_C(1-\kappa_I)[\pi(1-q)+(1-\pi)q]}$*. This mixed strategy ensures that when uncertainty does* *not resolve and* $x_I = B$ *the voter's belief about the incumbent's quality is equal to* κ_C.

ii. *The voter mixes when* $x_I = B$ *and uncertainty does not resolve. She re-elects the incumbent with probability* $\nu_{B\phi} = \frac{1-2\rho(1-\lambda_B)}{(1-\rho)}$. *This ensures that for a low-quality incumbent who sees* $s_I = B$, $\Pr(win|x_I = B) = \rho(1-\lambda_B) + \nu_{B\phi}(1-\rho)$ $= \Pr(win|x_I = A) = \rho\lambda_B + (1-\rho)$. *Voter behavior in other information sets is as follows: she re-elects if uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve and* $x_I = A$. *She removes the incumbent if uncertainty resolves and* $x_I \neq \omega$.

(b) *If* $\kappa_C > \kappa_I$

i. *The incumbent plays* $x_I = s_I$ *with probability* 1 *except when the incumbent is low quality and* $s_I = B$, *in which case the incumbent plays* A *with probability* $\sigma = \frac{\kappa_I(1-\kappa_C)}{\kappa_C(1-\kappa_I)} \cdot \frac{\pi}{\pi(1-q)+(1-\pi)q} - \frac{\pi q+(1-\pi)(1-q)}{\pi(1-q)+(1-\pi)q}$. *This mixed strategy ensures that when uncertainty does not resolve and* $x_I = A$ *the voter's belief about the incumbent's quality is equal to* κ_C.

ii. *The voter mixes when* $x_I = A$ *and uncertainty does not resolve. She re-elects the incumbent with probability* $\nu_{A\phi} = \frac{\rho(1-2\lambda_B)}{(1-\rho)}$. *This ensures that for a low-quality incumbent who sees* $s_I = B$, $\Pr(win|x_I = B) = \rho(1-\lambda_B) = \Pr(win|x_I = A)$ $= \rho\lambda_B + \nu_{A\phi}(1-\rho)$. *Voter behavior in other information sets is as follows: she re-elects if uncertainty resolves and* $x_I = \omega$, *and removes the incumbent if uncertainty resolves and* $x_I \neq \omega$ *or if uncertainty does not resolve and* $x_I = B$.

3. *If* $\kappa_C > \bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent unless uncertainty resolves and* $x_I = \omega$. *(Note for very high* κ_C *the voter won't re-elect the incumbent even if* $x_I = \omega$. *But* $x_I = s_I$ *is still optimal since policy choice doesn't affect election).*

(a) *Details of voter beliefs in the equilibrium. If uncertainty resolves and* $x_I = \omega$ *the voter believes that the incumbent is high quality with probability* $\bar{\mu}_{\substack{x_I=A \\ \omega=A}} = \bar{\mu}_{\substack{x_I=B \\ \omega=B}} = \frac{\kappa_I}{\kappa_I+(1-\kappa_I)q} >$

$\bar{\mu}_{\substack{x_I=A \\ \omega=\phi}}$. *If uncertainty resolves and* $x_I \neq \omega$ *the voter believes that the incumbent is low quality with probability* 1 *since high quality incumbents always see* $s_I = \omega$.

Parts 2 and 4 of the next proposition use the following cutpoints for equilibria involving pandering:

$$\tilde{\kappa}_C^1 \equiv \frac{\kappa_I\left[\pi(1-\pi)\left(1-q^M\right)^2+q^M\left(1-q^M\right)\left[(1-\pi)^2q+\pi^2(1-q)\right]\right]}{\kappa_I\left[\pi(1-\pi)(1-q^M)^2+q^M(1-q^M)\left[(1-\pi)^2q+\pi^2(1-q)\right]\right]+(1-\kappa_I)[\pi(1-q^M)+(1-\pi)q^M][\pi(1-q)q^M+(1-\pi)q(1-q^M)]} \text{ and}$$

$$\tilde{\kappa}_C^2 \equiv \frac{\kappa_I\left[\pi(1-\pi){q^M}^2+q^M\left(1-q^M\right)\left[(1-\pi)^2q+\pi^2(1-q)\right]\right]}{\kappa_I\left[\pi(1-\pi){q^M}^2+q^M(1-q^M)\left[(1-\pi)^2q+\pi^2(1-q)\right]\right]+(1-\kappa_I)[\pi q^M+(1-\pi)(1-q^M)][\pi(1-q)(1-q^M)+(1-\pi)qq^M]}.$$

Proposition 5 (details of equilibrium for nonstrategic media model) *In the nonstrategic media model there is an equilibrium.*

1. *If* $\kappa_C < \tilde{\mu}_{\substack{x_I=B \\ x_M=A}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$. *Otherwise the voter re-elects the incumbent.*

2. *If* $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=B \\ \omega=A}}, \tilde{\mu}_{\substack{x_I=A \\ \omega=B}}\right)$ *then there is a perfect accountability equilibrium if* $\rho \geq \tilde{\rho}$. *In this equilibrium, the voter removes the incumbent if uncertainty resolves and* $x_I \neq \omega$ *or if uncertainty does not resolve and* $x_I = B$ *but* $x_M = A$. *The voter re-elects the incumbent if uncertainty resolves and* $x_I = \omega$, *or if uncertainty does not resolve and* $x_I = A$ *but* $x_M = B$, *or if uncertainty does not resolve and* $x_I = x_M$. *If* $\rho < \tilde{\rho}$ *there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering. Details of the equilibrium with pandering:*

   (a) *If* $\kappa_C < \tilde{\kappa}_C^1$

      i. *The incumbent plays* $x_I = s_I$ *with probability* 1 *except when the incumbent is low quality and* $s_I = B$, *in which case the incumbent plays* A *with probability* $\sigma = 1 - \frac{(1-\kappa_C)\kappa_I(1-\pi)\left(1-q^M\right)}{\kappa_C(1-\kappa_I)[\pi(1-q)q^M+(1-\pi)q(1-q^M)]}$. *This mixed strategy ensures that when* $x_I = B$ *and* $x_M = A$ *the voter's belief about incumbent quality is equal to* κ_C.

      ii. *The voter mixes when* $x_I = B, x_M = A$, *and uncertainty does not resolve. She re-elects the incumbent with probability* $\nu_{BA} = 1 - \frac{\rho(1-2\lambda_B)}{(1-\rho)\Pr(s_M=A|s_I=B,I=L)}$. *This* *ensures that for a low-quality incumbent who sees $s_I = B$, $\Pr(win|x_I = B) = \Pr(win|x_I = A)$. Voter behavior in other information sets is as follows: re-elect if uncertainty resolves and $x_I = \omega$, if uncertainty does not resolve and $x_I = A$ but $x_M = B$, or if uncertainty does not resolve and $x_I = x_M$. Remove the incumbent if uncertainty resolves and $x_I \neq \omega$.*

(b) *If $\kappa_C > \tilde{\kappa}_C^1$*

i. *The incumbent plays $x_I = s_I$ with probability 1 except when the incumbent is low quality and $s_I = B$, in which case the incumbent plays A with probability $\sigma = \frac{\kappa_I(1-\kappa_C)}{\kappa_C(1-\kappa_I)} \cdot \frac{\pi(1-q^M)}{\pi(1-q)(1-q^M)+(1-\pi)qq^M} - \frac{\pi q\left(1-q^M\right)+(1-\pi)(1-q)q^M}{\pi(1-q)(1-q^M)+(1-\pi)qq^M}$. This mixed strategy ensures that when $x_I = A$ and $x_M = B$ the voter's belief about incumbent quality is equal to κ_C.*

ii. *The voter mixes when $x_I = A, x_M = B$, and uncertainty does not resolve. She re-elects the incumbent with probability $\nu_{AB} = \frac{\rho(1-2\lambda_B)}{(1-\rho)\Pr(s_M=B|s_I=B,I=L)} + \frac{2\Pr(s_M=B|s_I=B,I=L)-1}{\Pr(s_M=B|s_I=B,I=L)}$. This ensures that for a low-quality incumbent who sees $s_I = B$, $\Pr(win|x_I = B) = \Pr(win|x_I = A)$. Voter behavior in other information sets is as follows: re-elect if uncertainty resolves and $x_I = \omega$ or if uncertainty does not resolve and $x_I = x_M$. Remove the incumbent if uncertainty resolves and $x_I \neq \omega$ or if uncertainty does not resolve and $x_I = B$ but $x_M = A$.*

3. *If $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=A \\ \omega=B}}, \tilde{\mu}_{\substack{x_I=B \\ \omega=B}}\right)$ then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and $x_I \neq \omega$ or if uncertainty does not resolve and $x_I \neq x_M$. The voter re-elects the incumbent if uncertainty resolves and $x_I = \omega$ or if uncertainty does not resolve and $x_I = x_M$.*

4. *If $\kappa_C \in \left(\tilde{\mu}_{\substack{x_I=B \\ \omega=B}}, \tilde{\mu}_{\substack{x_I=A \\ \omega=A}}\right)$ then there is a perfect accountability equilibrium if $\rho \geq \tilde{\rho}$. In this equilibrium, the voter removes the incumbent if uncertainty resolves and $x_I \neq \omega$, or if uncertainty does not resolve and $x_I = x_M = B$ or $x_I \neq x_M$. The voter re-elects the incumbent if uncertainty resolves and $x_I = \omega$, or if uncertainty does not resolve and $x_I = x_M = A$. If*

$\rho < \tilde{\rho}$ there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering. Details of the equilibrium with pandering:

(a) If $\kappa_C < \tilde{\kappa}_C^2$

i. The incumbent plays $x_I = s_I$ with probability 1 except when the incumbent is low quality and $s_I = B$, in which case the incumbent plays A with probability $\sigma = 1 - \frac{(1-\kappa_C)\kappa_I(1-\pi)q^M}{\kappa_C(1-\kappa_I)[\pi(1-q)(1-q^M)+(1-\pi)qq^M]}$. This mixed strategy ensures that when $x_I = B$ and $x_M = B$ the voter's belief about incumbent quality is equal to κ_C.

ii. The voter mixes when $x_I = B, x_M = B$, and uncertainty does not resolve. She re-elects the incumbent with probability $\nu_{BB} = \frac{1-2\rho(1-\lambda_B)}{(1-\rho)\Pr(s_M=B|s_I=B,I=L)} - 1$. This ensures that for a low-quality incumbent who sees $s_I = B$, $\Pr(win|x_I = B) = \Pr(win|x_I = A)$. Voter behavior in other information sets is as follows: re-elect if uncertainty resolves and $x_I = \omega$ or if uncertainty does not resolve and $x_I = x_M = A$. Remove the incumbent if uncertainty does not resolve and $x_I \neq x_M$ or if uncertainty resolves and $x_I \neq \omega$.

(b) If $\kappa_C > \tilde{\kappa}_C^2$

i. The incumbent plays $x_I = s_I$ with probability 1 except when the incumbent is low quality and $s_I = B$, in which case the incumbent plays A with probability $\sigma = \frac{\kappa_I(1-\kappa_C)}{\kappa_C(1-\kappa_I)} \cdot \frac{\pi q^M)}{\pi(1-q)q^M+(1-\pi)q(1-q^M)} - \frac{\pi q q^M+(1-\pi)(1-q)\left(1-q^M\right)}{\pi(1-q)q^M+(1-\pi)q(1-q^M)}$. This mixed strategy ensures that when $x_I = A$ and $x_M = A$ the voter's belief about incumbent quality is equal to κ_C.

ii. The voter mixes when $x_I = A, x_M = A$, and uncertainty does not resolve. She re-elects the incumbent with probability $\nu_{AA} = \frac{\rho(1-2\lambda_B)}{(1-\rho)[1-\Pr(s_M=B|s_I=B,I=L)]}$. This ensures that for a low-quality incumbent who sees $s_I = B$, $\Pr(win|x_I = B) = \Pr(win|x_I = A)$. Voter behavior in other information sets is as follows: re-elect if uncertainty resolves and $x_I = \omega$. Otherwise remove the incumbent.

5. If $\kappa_C > \tilde{\mu}_{\substack{x_I=A \\ \omega=A}}$ then there is a perfect accountability equilibrium. The voter removes the

incumbent unless uncertainty resolves and $x_I = \omega$. For sufficiently high κ_C the voter won't re-elect the incumbent even if $x_I = \omega$, but $x_I = s_I$ is still optimal.

Part 2 of the next proposition uses the following cutpoint for equilibria involving pandering:
$$\hat{\kappa}_C \equiv \frac{\kappa_I\left[\pi(1-\pi)+(1-\kappa_M)\left[\pi^2(1-q)+(1-\pi)^2q\right]\right]}{\kappa_I\left[\pi(1-\pi)+(1-\kappa_M)\left[\pi^2(1-q)+(1-\pi)^2q\right]\right]+(1-\kappa_I)[\pi+(1-\kappa_M)(1-\pi)][(1-\pi)q+\pi(1-q)(1-\kappa_M)]}.$$

Proposition 6 (details of equilibrium for strategic media model) *In the strategic media model there is an equilibrium.*

1. *If $\kappa_C < \hat{\mu}_{\substack{x_I=B\\ \omega=B}}$ then there is a perfect accountability equilibrium. The voter removes the incumbent if uncertainty resolves and $x_I \neq \omega$, or if uncertainty does not resolve and $x_I \neq x_M$. The voter re-elects the incumbent if uncertainty resolves and $x_I = \omega$, or if uncertainty does not resolve and $x_I = x_M$.*

2. *If $\kappa_C \in \left(\hat{\mu}_{\substack{x_I=B\\ x_M=B}}, \hat{\mu}_{\substack{x_I=A\\ x_M=A}}\right)$ then there is a perfect accountability equilibrium if $\rho \geq \hat{\rho}$. The voter removes the incumbent if uncertainty resolves and $x_I \neq \omega$, or if uncertainty does not resolve and $x_I \neq x_M$ or $x_I = x_M = B$. The voter re-elects the incumbent if uncertainty resolves and $x_I = \omega$, or if uncertainty does not resolve and $x_I = x_M = A$. If $\rho < \hat{\rho}$ there cannot be a perfect accountability equilibrium and there is an equilibrium with pandering. Details of the equilibrium with pandering:*

   (a) *If $\kappa_C < \hat{\kappa}_C$*

      i. *The incumbent plays $x_I = s_I$ with probability 1 except when the incumbent is low quality and $s_I = B$, in which case the incumbent plays A with probability $\sigma = 1 - \frac{(1-\kappa_C)\kappa_I(1-\pi)}{\kappa_C(1-\kappa_I)[\pi(1-q)(1-\kappa_M)+(1-\pi)q]}$. This mixed strategy ensures that when $x_I = B$ and $x_M = B$ the voter's belief about incumbent quality is equal to κ_C.*

      ii. *The voter mixes when $x_I = B, x_M = B$, and uncertainty does not resolve. She re-elects the incumbent with probability $\nu_{BB} = \frac{\rho(1-2\lambda_B)}{(1-\rho)(1-\kappa_M\lambda_B)} + \frac{1-\kappa_M(1-\lambda_B)}{1-\kappa_M\lambda_B}$. This ensures that for a low-quality incumbent who sees $s_I = B$, $\Pr(win|x_I = B) = \Pr(win|x_I = A)$. Voter behavior in other information sets is as follows: re-elect if* *uncertainty resolves and* $x_I = \omega$ *or if uncertainty does not resolve and* $x_I = x_M = A$*. Otherwise remove the incumbent.*

(b) *If* $\kappa_C < \hat{\kappa}_C$

i. *The incumbent plays* $x_I = s_I$ *with probability* 1 *except when the incumbent is low quality and* $s_I = B$*, in which case the incumbent plays* A *with probability* $\sigma = \frac{\kappa_I(1-\kappa_C)}{\kappa_C(1-\kappa_I)} \cdot \frac{\pi}{\pi(1-q)+(1-\pi)q(1-\kappa_M)} - \frac{\pi q+(1-\pi)(1-q)(1-\kappa_M)}{\pi(1-q)+(1-\pi)q(1-\kappa_M)}$*. This mixed strategy ensures that when* $x_I = B$ *and* $x_M = B$ *the voter's belief about incumbent quality is equal to* κ_C*.*

ii. *The voter mixes when* $x_I = B, x_M = B$*, and uncertainty does not resolve. She re-elects the incumbent with probability* $\nu_{AA} = \frac{\rho(1-2\lambda_B)}{(1-\rho)(1-\kappa_M(1-\lambda_B))}$*. This ensures that for a low-quality incumbent who sees* $s_I = B$*,* $\Pr(win|x_I = B) = \Pr(win|x_I = A)$*. Voter behavior in other information sets is as follows: re-elect if uncertainty resolves and* $x_I = \omega$*. otherwise remove the incumbent.*

3. *If* $\kappa_C > \hat{\mu}_{\substack{x_I=A \\ \omega=A}}$ *then there is a perfect accountability equilibrium. The voter removes the incumbent unless uncertainty resolves and* $x_I = \omega$*. (Note for really high* κ_C *the voter won't re-elect the incumbent even if* $x_I = \omega$*, but we can still have* $x_I = s_I$ *in equilibrium.)*

Figure 1: Baseline No-Media Model

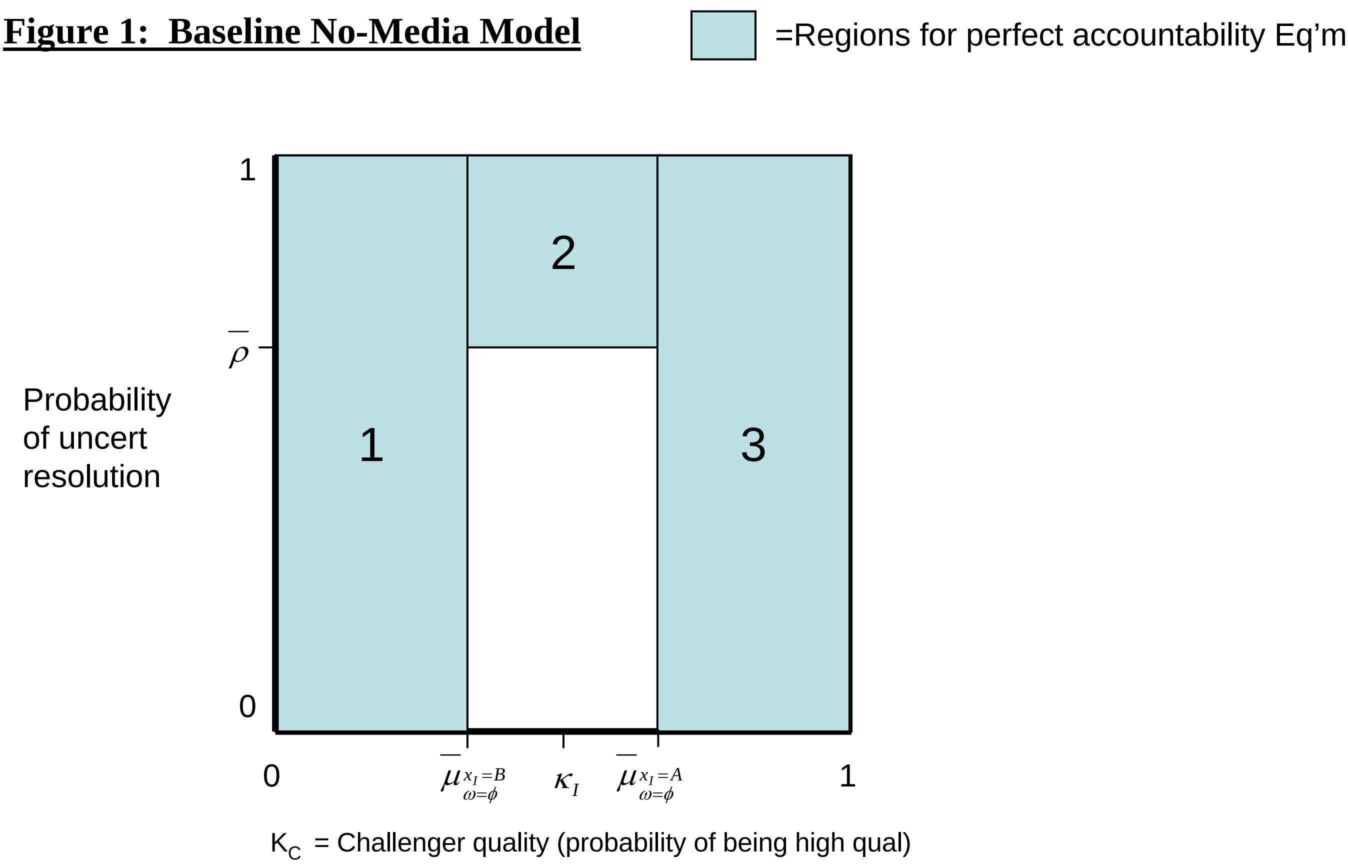

Figure 2: Nonstrategic Media Model

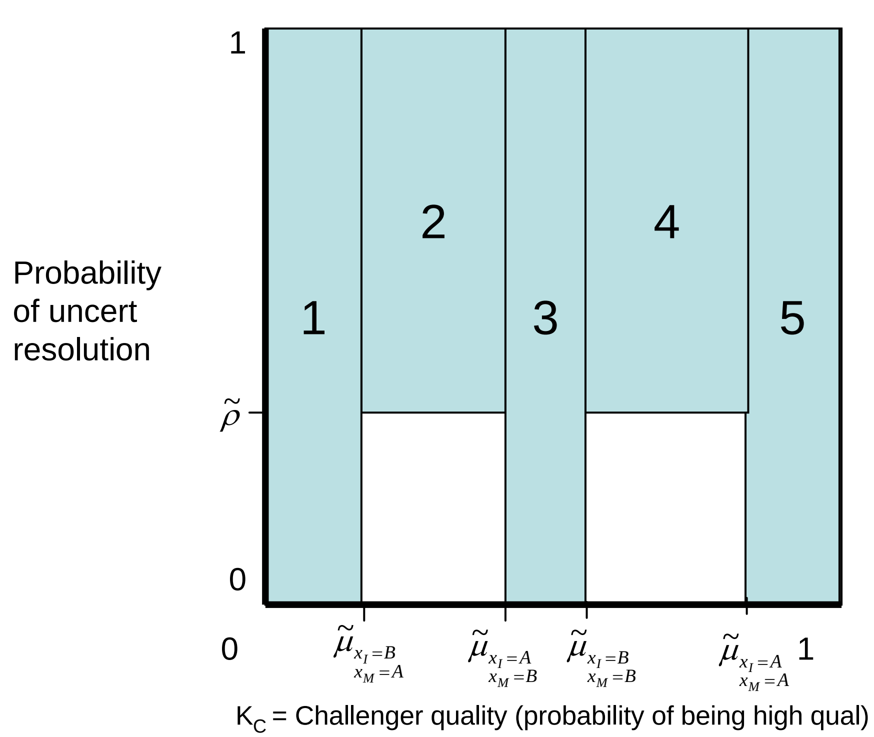

Figure 3: Strategic Media Model