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When can a news organization lead public opinion? *

Ideology versus market forces in decisions to make news

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Abstract. Do news organizations purposefully lead the public to support a particular ideological agenda? When debating this question, many analysts draw conclusions from weak empirical evidence. We introduce a model that clarifies how a news organization's internal structure combines with market forces to affect when it can lead public opinion. We identify conditions under which liberal reporters or politically-driven media magnates can achieve ideological goals. We also illuminate important barriers that prevent many would-be public opinion leaders from ever satisfying these conditions. We show that internal structure and market forces are critical determinants of any news organization's power over public opinion.

> Many believe that Bill Clinton is president today because of the media's relentless, and in many cases unfair, attacks on President Bush, me and the Bush/Quayle administration. I think it's critical that we debate the role the media play in shaping public policy and election results – *before they can seriously affect this year's election results*.
>
> Dan Quayle (1996, emphasis in original)

> *[C]ertain media outlets* – especially newspapers and magazines, but sometimes also television's programs and networks – do not merely reflect the social and political forces around them, they *actively work to shape political discourse to their own purposes*.
>
> Benjamin I. Page (1996: 116, emphasis in original)

> We need to start asking the same fundamental questions about the press that we do of the other powerful institutions of this society – about who is served, about standards, about self-interest and its eclipse of the public interest ...
>
> Carl Bernstein (1997: 61)

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News organizations play a vital role in a democracy. From disseminating information to keeping an eye out for corrupt politicians, the news facilitates citizen control of government. In the course of carrying out these tasks, the news leaves an imprint on public opinion. That news organizations can affect public opinion leads to broad debates about the extent of their political power. One such debate swirls around the question: Who can use the power of news organizations and to what ends?

We address this question as it regards reporters and others who work within news organizations, a group of persons who we call media elites. Media elites are the people whose actions ultimately determine the content of news. They may be reporters who have a liberal bias or media ownership groups who care more about private political concerns than informing the public. Our goal is to clarify the conditions under which *leading* occurs – that is, the conditions under which ideologically-driven media elites can use the news to shape political discourse to their own ideological purposes.

Do ideological media elites lead the public? Certainly, some media elites – particularly those who work for large newspapers or television networks – have opportunities to lead. Yet even large news organizations often fail in their attempts to move audiences. Consider, for example, the many political spins that audiences reject, the many advertisements that people ignore, and the many network news programs that fail due to low ratings.

An alternative point of view is that market considerations drive news decisions (see, e.g., Hamilton, 1998a: 30–44 on how market factors affect the provision of violent programming). If news organizations depend on advertising revenues or high ratings, then even the most ideological media elites may be severely restricted in the extent to which they can shape political discourse to their own purposes. So while it is clear that there are opportunities for media elites to influence the public, the question remains – *When* can they lead public opinion ideologically?

Private citizens, journalists, and media scholars make a wide range of claims on this matter. Since most media elites' decisions are difficult or impossible to observe, however, most of these claims are based on weak evidence – they come from anecdotes or by elevating correlation to causation. Consider, for example, survey-based studies of media agenda setting. These studies show that public opinion about which problems are important correlates with the problems reported on by prominent news organizations (for a review, see Rogers et al., 1997). This work shows a clear relationship between what the news reports and what the public thinks about. But this work cannot be taken as *prima facie* evidence that the media leads the public. To see why, notice that market forces might induce competitive news organizations *to anticipate* what potential consumers will want from the news. As

a result, news organizations will offer stories that people will want to read – stories that may ultimately influence public opinion and generate a positive correspondence between trends in news content and trends in public opinion. In such a case, it is the market demands of media consumers, and not the private political agendas of reporters, editors, and owners, that determine the content of news. In short, news content and public opinion data – no matter how skillfully analyzed – are insufficient to distinguish between the media leading the public and the media anticipating public demands.[1] To determine if leading has taken place, it is necessary to contemplate news producers' motives and incentives.

To examine when media elites can lead public opinion, we introduce a game-theoretic model of media decision-making. We draw the model's premises from empirical aspects of news production and consumption about which there is wide agreement. We then use the model's conclusions to clarify aspects of the effect of news about which there is wide disagreement.

Our main result is a set of necessary conditions for when news organizations can lead public opinion. We find that leading occurs only if all of the following are true:

- The audience pays the monetary and opportunity costs associated with attending to a news report,
- The audience holds prior beliefs that contradict what is reported,
- A reporter files a report to satisfy her ideological or career goals, and
- The reporter's editor includes the report in the news either because she is an ideologue and the report satisfies her ideological goals, or because an ideological ownership induces her to include the report.

Put another way, the negation of any one of these statements is sufficient to prevent an ideologue from using the news to lead the public into sharing their own ideological perspective.

More generally, we find that thinking through the news production process in a game-theoretic way clarifies the barriers facing would-be public opinion leaders who work within news organizations. The model reminds us that a news organization's power over public opinion is the product of interrelated decisions by reporters, editors, owners, and consumers. By studying it as such, we can see that the conditions under which ideological media elites can lead the public are not easy to satisfy – particularly in the competitive market conditions that characterize our country's largest news organizations.[2]

We continue as follows. First, we present our model. Then, we use it to derive conclusions about leading, including the result described above. While the model is sufficient to address the question at hand, we recognize that read-

ers will be curious about what our work implies about related questions. In the article's penultimate section, we use simple extensions of the model to answer some of them. In the concluding section, we argue that our results provide an important caution to media critics who argue for reforms to alter how the media covers politics. Indeed, greater attention to how ideology, organization, and markets affect news content can reduce the number of counterproductive reforms offered. It can also help a wide range of citizens better understand the relationship between media and politics.

1. The model

The substantive foundation of our model is four widely accepted empirical premises about news producers and consumers.

Premise 1. The actions of individuals within news organizations determine what is news.

Many debates about the effects of news on public opinion proceed as if "the media" is a monolithic, unitary actor. However, "the media" does not make decisions, individuals within it do – particularly individuals who work for news organizations (see, e.g., Sigal, 1973; Gans, 1979).

Premise 2. Most news organizations, from the largest television news networks to the smallest local newspapers, share a common organizational structure.

At the base of this structure are reporters. Reporters witness events, conduct interviews, and make decisions about how to represent the events that they observe. In the middle of this structure are editors. Editors make decisions about how much, if any, of a newspaper or news broadcast will be devoted to a particular story. At the top of this structure are owners. By owners, we mean any actor or actors who can control or affect a news organization's resources but need not be directly involved in decisions about which stories are newsworthy (e.g., upper management, Rupert Murdoch, Ted Turner, the board of directors of a public television station).

Premise 3. Organizational structure can affect reporters', editors', and owners' incentives.

An important theme in modern studies of economic and political decision making is that the organizational structure of decision making institutions

can facilitate collective action by affecting the incentives of individual decision makers (e.g., Shepsle, 1979, 1989; Rohde, 1994; Aldrich, 1995; Shepsle and Bonchek, 1997). The structure of news organizations plays a similar role. For example, if a reporter wants her story published and featured prominently (i.e., if she wants a by-line on a front page story), then she has an incentive to account for the likely preferences of an editor when making decisions about what to report.

Premise 4. Citizens need not be passive recipients of media reports.

Media consumers have limited resources (i.e., time and energy). As a result, they cannot attend to all available information; they must choose to attend to some news stories while ignoring others. How they make these choices matters. Moreover, if consumers benefit from having correct beliefs about some aspects of the political environment and lack the time or energy to attend to all media, then they have an incentive to be careful about how they direct their attention to news.

From these four substantive premises, we build a model for determining when a news organization can lead public opinion. In the same way that Downs (1957) learned useful things about electoral competition by examining a single interaction between two candidates and a single electorate with a single contestable issue in the background, we intend to clarify the political power of news by examining a single interaction between a *news organization* and a *target audience* with a single reportable event in the background. From Premises 1, 2, and 3, we define a news organization as a hierarchy consisting of an owner, an editor, and a reporter.[3] From Premise 4, we define a target audience as a group of citizens whose political views or news consumption habits may be of concern to the news organization's members. To simplify the exposition, we treat the target audience as an individual actor. Alternatively, you may think of "the audience" in our model as a representative member of the target audience.

The model is a simple one that is built with a specific task in mind. Its purpose is to clarify whether or not media elites at each of the main levels within a news organization take actions that result in that organization shaping political discourse to its own ideological purposes. Of course, we recognize there are many other questions about media and politics that the model does not address directly. Later in the article, we discuss how extensions of the model address some of these questions. Because there is only a minimal existing stock of models from which to draw, however, we start simple and find that doing so is sufficient to bring needed clarity to the issue at hand.

We continue with an intuitive description of the model. First, we describe the sequence of actions within it. Next, we describe the objectives of the news organization's members and the target audience. Then, we present our conclusions. An appendix includes all required maths.

1.1. *The model's sequence of actions*

We represent an interaction between a news organization and news consumers as a game between four players: a reporter, an editor, an owner, and a target audience. In the parlance of economics, our model combines aspects of a voluntary disclosure model (e.g., Milgrom and Roberts, 1986) with aspects of a principal-agent model – the interaction between the news organization and the audience is a game of voluntary disclosure, while interactions among media elites are principal-agent relationships. Unless otherwise stated, all aspects of this interaction are common knowledge. The game's sequence of actions is as follows and as depicted in Figure 1.

Stage 1. An event does (E = 1) or does not (E = 0) occur. We say that an event is *any person, place, issue, or object about which a reporter can file a report*. For example, events include a House vote on an article of impeachment, a particular attribute of the vote, an opinion about the vote, or a prediction of the vote. Alternatively, you can think of the event as an action taken by someone outside of the news organization (e.g., a candidate). In either case, an event is anything about which a news organization can report. Since there is an infinite number of such events, a news organization with finite pages or time to fill must choose which events to report.

We assume that the target audience may be uncertain about whether or not the event occurred. That is, a target audience may want to base current or future actions on knowledge of certain events (e.g., Did Bill Clinton have an affair?). For many such events, people cannot acquire direct evidence and may attend to news to reduce their uncertainty.

We represent this uncertainty as the belief that the event occurred with probability $e \in [0, 1]$ and the belief that it did not occur with probability $1 - e$. During the course of the game, the news organization may report on the event and the report may cause the audience to change its beliefs about the event's occurrence. Such belief changes are endogenous to the model (i.e., the effect of news is something we derive rather than assume).

Stage 2. If an event occurs, the reporter chooses whether or not to produce a report about the event, $S \in \{0, 1\}$. $S = 1$ means that the event is reported and $S = 0$ means that it is not. If $E = 0$, then the game continues without the reporter's participation and $S = 0$.

Stage 3. If the reporter files a report, then the editor decides whether or not the report will appear in the news $N \in \{0, 1\}$. $N = 1$ means that the

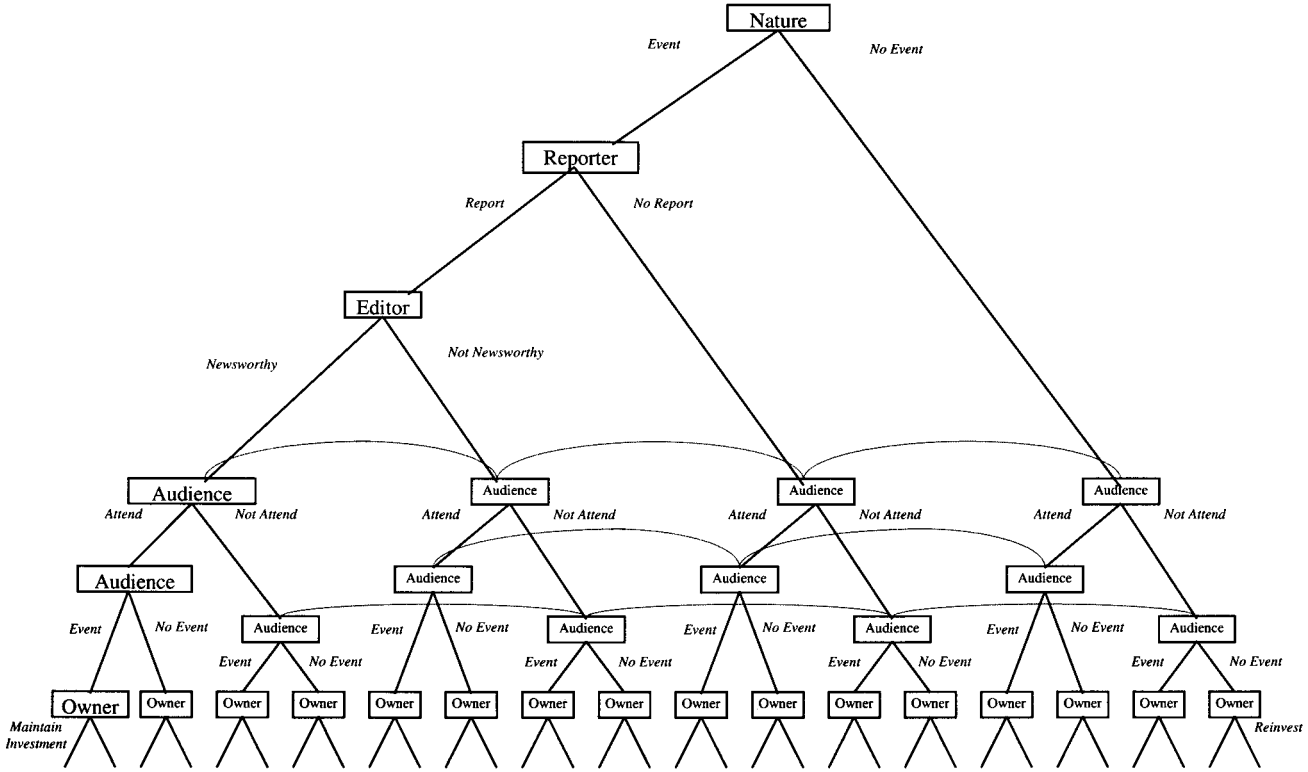

Figure 1. The model's extensive form.

editor deems the report newsworthy. $N = 0$ means that she does not. If $S = 0$, then the game continues without the editor's participation and $N = 0$. For simplicity, we describe this action as the editor's decision to include the story or not. However, the editor's decision can also be thought of as whether or not to display the story with a level of prominence sufficient to attract the audience's attention given that they have chosen to attend to the news (e.g., a lead story). Together, the reporter's and editor's decisions determine whether or not the news includes a report of the event that is sufficient to attract attention once a newspaper is purchased or a news broadcast is viewed.

Stage 4. The audience makes two decisions. The audience first decides whether or not to attend to the news. Specifically, the audience, who initially observes neither E, S, nor N, chooses whether or not to *attend* to the news, $A \in \{0, 1\}$. If the audience attends to the news ($A = 1$), then it pays cost $k \in \mathcal{R}$ and observes N. Otherwise ($A = 0$), the audience pays nothing and observes nothing. $k \in \mathcal{R}$ represents the monetary and opportunity costs of attending to the news minus the non-instrumental benefits of doing so. Setting the value of k high allows us to answer questions about leading when the costs of attending to news are high, while low values of k allow us to answer questions about leading when attending to news is free and easy. Negative values of k represent cases where the *non-instrumental* or *entertainment* value of news outweighs its potential informational value (see Downs, 1957: 223).

After deciding whether or not to attend to the news, the audience takes an action, $P \in \{0, 1\}$, based on its (possibly updated) beliefs about the event. For example, the audience casts a vote, takes a point of view in a conversation, or states an opinion about whether or not a particular problem is important. Taking the action $P = 1$ maximizes the audience's utility if the event occurred ($E = 1$), while taking the action $P = 0$ maximizes its utility if $E = 0$.

Final stage. The owner decides whether to maintain her investment in the news organization or reinvest elsewhere (e.g., at the extreme, the owner decides whether or not to shut down the news organization), $J \in \{0, 1\}$. $J = 1$ means that the owner maintains her investment. $J = 0$ means that she does not.[4] Then, the players receive utility payoffs and the game ends.[5]

1.2. *Player objectives*

We assume that goals motivate player actions. The audience is motivated to attend to the news only if it provides entertainment value (when $k < 0$) or it allows the audience to reduce its uncertainty about whether or not the event occurred (when $k \geq 0$). We also assume that the audience is better off if its votes, opinions, or contributions to political conversations are based on accurate beliefs about an event's occurrence (i.e., its choice of P matches the true value of E.)

Members of a news organization are motivated by a combination of *career* goals and *ideological* goals. In the model, the reporter achieves a career goal when the editor includes her report in the news. The editor achieves a career goal when the owner maintains her investment in the news organization (and thus there is not a budget cut). The owner's career goal is to attract the audience to the news (e.g., to generate sales, ratings, or advertising revenue). To this end, we assume that the owner maintains her investment ($J = 1$) only if she receives more than an exogenously determined rate of return, $t \in \mathcal{R}$. This rate of return represents the market or psychic rate of return on her investment in the news organization (so if the value of owning the news organization is less than t, she would derive greater returns from investing elsewhere). Since t can take on any value, this assumption is without a loss of generality.

Ideological goals are different than career goals. Our inclusion of ideological goals is motivated by questions about the effect of media elites' political ideologies on news content (e.g., Lichter et al., 1986; Parenti, 1986; Herman and Chomsky, 1988; Page, 1996; Patterson and Donsbach, 1996; Will, 2000). We define a media elite's ideological goal relative to what is good (bad) for the audience. Suppose, for example, that an editor is a liberal. Then we say that her ideological goal is accomplished by having the audience take liberal actions (e.g., hold liberal views). Note that her ability to achieve her goal may depend on whether her audience's ideology is common (e.g., liberal) or conflicting (e.g., conservative) with her own.

In the model, we say that a reporter, editor, or owner shares *common interests* (i.e., common ideology) with the audience if she benefits when the audience's choice is based on an accurate understanding of the event's occurrence (e.g., they choose $P = 1$ when $E = 1$). We say that an actor and the audience have *conflicting interests* if the actor benefits when the audience has an inaccurate understanding of the event (e.g., they choose $P = 0$ when $E = 1$). We denote a media elite's ideological goals as $c_i \in \{0, 1\}$, where the subscript $i \in \{r, ed, o\}$ refers to the reporter, editor, and owner, respectively. For each media elite, $c_i = 0$ denotes common interests and $c_i = 1$ denotes conflicting interests.

We denote the relative importance of each media elite's ideological and career goals with the variable $q_i \in [0, 1]$. The higher q_i, the more that media elite i cares about career goals. For example, when $q_{ed} > .5$ we say that the editor cares more about career goals and when $q_{ed} < .5$ we say that she cares more about ideological goals.

In mathematical terms, the players have the following utility functions (this summarizes our assumptions about their objectives). For the reporter, $U_r = q_rN - (1 - q_r)(|c_r - |P - E||)$. For the editor, $U_{ed} = q_{ed}J - (1 - q_{ed})(|c_{ed} - |P - E||)$. For the owner, $U_o = q_oA - (1 - q_o)(|c_o - |P - E||)$. And

for the audience, $U_a = -kA - |P - E|$. To simplify the analysis, we make two additional assumptions. These assumptions affect the mechanics, but not the message, of our theoretical efforts. First, we restrict our attention to pure strategies. Allowing mixed strategies has a predictable effect on outcomes but provides no additional clarity regarding the conditions under which leading occurs. Second, we assume that if taking an action and not taking an action provide the same expected utility, then the player does not take an action.

1.3. *Definitions: Influence, leading, and independence*

We say that the news organization *influences* the audience if and only if the news causes the audience to change its action. The reason for defining influence in this way, as opposed to defining influence as any change in beliefs, is a desire for empirical relevance. While "any change in beliefs" might be a reasonable way to measure influence, most social scientists cannot observe minute belief changes. They can, however, observe changes in certain actions. For example, public opinion studies of media influence generate data on observable actions such as survey responses to questions about "the most important problem facing the nation." Thus, we state our conclusions in terms of changes in observable phenomena.

Influence, as just defined, is necessary but not sufficient for the media to lead public opinion. To see why this is true, suppose that the owner, editor, and reporter are concerned solely with their career goals ($q_o = q_{ed} = q_r = 1$) and influence occurs. That the audience is influenced by the news, in this case, is irrelevant to all members of the news organization – the owner acts on her desire for the audience to attend to the news, the editor acts on her desire to maintain the news organization's budget, and the reporter acts on her desire to have her story included in the news. This is not a case of media elites actively working *"to shape political discourse to their own purposes*" (Page, 1996: 116, emphasis in original).

With circumstances such as this in mind, we say that a news organization *leads* the audience if and only if influence occurs *and* the highest-ranking member of the organization who affects news content cares more about ideology than career goals. The rationale for this definition is as follows. If all members of a news organization care primarily about ideological goals, or if the decisive actor regarding news content is driven by ideology and can induce the people under her to do what she wants, then the decisive actor's ideology, and not the need to cater to the audience, determines the content of news. When such news is influential, leading occurs – a media elite's ideological goal causes the audience to change its beliefs.

One additional definition simplifies the statement of our results. We say that the editor is *independent* if the owner's budgetary (investment) decision

does not provide the editor a payoff sufficient to prevent her from basing her choices on her ideological goal.

With these three definitions in hand, we can further clarify what leading means. For example, if a story is not influential, then leading cannot occur. If the reporter, editor, and owner care more about career goals than ideological goals, then influence can occur but not leading. By contrast, if a story is influential, and if an independent editor cares primarily about ideology, then the outcome is a prime example of leading. Similarly, if a story is influential, if the editor is not independent, and if the owner cares more about ideological goals than career goals, then leading occurs.

2. Results

We now use the model to explain when a news report influences the audience and, if influence occurs, when such a change is an instance of leading. To derive our results, we use the Perfect Bayesian Equilibrium solution concept (Fudenberg and Tirole, 1991).

We begin with a preliminary result: The Influence Theorem. The Influence Theorem lists necessary and sufficient conditions for influence in our model. It describes the set of beliefs and strategies that members of a news organization and a target audience must have if the former are to influence the latter. The appendix contains formal statements of this and all other theorems.

The Influence Theorem:
The news organization influences the audience *if and only if* all of the following are true:

Audience:
– Is so uncertain about the event that it pays to attend to the news.
– The report contradicts its prior beliefs about the event.

Reporter:
Shares common interests with the audience *or* cares primarily about career goals.

Editor and owner:
The editor is independent, cares about ideology, and shares common interests with the audience OR The editor is not independent while the editor and owner each either share common interests with the audience *or* care primarily about career goals.

The Influence Theorem derives from an equilibrium – a set of shared understandings – between news producers and consumers. In this equilibrium, the audience attends to the news because it expects that the news will inform it about the event (when $k \geq 0$) or because of non-instrumental benefits (when $k < 0$). The audience does not care whether ideological or career goals motivate media elites – it merely needs a reason to believe that the news will supply the information it desires. The news organization, meanwhile, reports the event because its members believe that the audience will attend to it and because doing so satisfies the media elites' goals, whatever they are.

We now turn to the Leading Theorem, our main result. This theorem also describes equilibrium conditions and, by so doing, reveals the list of requirements that must be satisfied for leading to occur. In addition to containing all of the Influence Theorem's necessary conditions, the Leading Theorem also requires that ideology be the primary goal of the media elite whose decision ultimately determines whether or not an influential report is made.

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Shares common interests with the audience *or* cares primarily about career goals.

Editor and owner:
The editor is independent, cares primarily about ideology, and shares common interests with the audience OR The editor is not independent and shares common interests with the audience or cares primarily about career goals, while the owner cares primarily about ideology and shares common interests with the audience.

Perhaps the most important characteristic of the Leading Theorem is that multiple and substantial requirements must be satisfied simultaneously for leading to occur. In what follows, we provide an initial sense of the factors that make influence and/or leading difficult. Then, we use the Theorem to guide a more substantive discussion of when leading can occur.

2.1. *Factors that prevent influence and leading*

Both theorems begin by defining the two attributes that an audience must have if it is going to be influenced or led by news. One of these attributes is that the report contradicts its prior beliefs about the event : $e \leq .5$ and $E = 1$. The other attribute is that the audience is so uncertain about the event that it can receive a positive net benefit from attending to news about it ($e > k$). If an audience lacks either attribute, then influence and leading are impossible; for if it lacks the first attribute, then the report cannot change its beliefs; and if it lacks the second attribute, then it ignores the report. Of course, if k is sufficiently low (i.e., the audience derives a non-instrumental or entertainment benefit from attending to news), then the first condition of each theorem is easily satisfied.

Both theorems continue by defining the single attribute that an *influential* reporter must have. An influential reporter must have a compelling reason to issue the report; she must either share common interests with the audience ($c_r = 0$) *or* care more about career goals than ideological ones ($q_r > .5$). In the first case, she files a report because she benefits when the audience bases its choice on an accurate understanding of the event. In the second case, she files a report because she gains more from pleasing the editor than she loses if the report causes the audience to act against her own ideological interests. If a reporter lacks both motives, then she has no reason to issue a report.

Both theorems conclude with a statement about the attributes that an influential editor and owner must have. The statement is conditional on whether or not the editor is independent. An independent editor includes a report only if it is necessary to satisfy her ideological goal.[6] If the editor is not independent, then she conditions her action on how the owner will respond. In this case, a necessary condition for influence is that publication of the story makes it possible for the owner to achieve the market rate of return or her ideological goal.[7] For leading, there is the additional requirement that ideology be the primary motive of the media elite whose decision ultimately determines whether or not a report is published – the editor, when she is independent, and the owner, when she is not.

2.2. *Who can lead?*

If any one of the Leading Theorem's conditions is not satisfied, then the news organization *cannot* use a report on the event in question to lead the audience. Put another way, the Leading Theorem identifies a set of restrictions on ideological leading. These restrictions, while applicable to all news organizations, are more severe for some news organizations than for others, more severe on

some issues than on others, and more severe for some audiences than for others. We now turn our attention towards clarifying these distinctions.[8]

Table 1 renders our model's prediction about whether a particular news organization (e.g., NBC Nightly News, Workers World News Service, The Drudge Report) can influence or lead an audience (e.g., Democrats, schoolchildren, abortion rights activists, farmers) to think differently about an event (e.g., an increase in the crime rate, a change in defense spending, a scandal involving the president). Each column in Table 1 comes directly from a necessary condition stated in the Leading Theorem. Each row of Table 1 describes a set of possible empirical observations. The rows of Table 1 are for the case where the editor is not independent. An equivalent table for the case of an independent editor has analogous attributes. Note that Table 1's columns are mutually exclusive, but not collectively exhaustive. Organizing the information in this way simplifies the table considerably while satisfying our pedagogical aims.

Leading requires a specific combination of event, news organization, and audience characteristics. Comparing Table 1's rows clarifies these requirements. Consider, for example, a comparison of rows 1 and 2. In row 1, leading and influence occur; in row 2, they do not. The cause of this difference in outcomes is that only in row 1 is the audience's uncertainty about the event high enough to justify paying the cost of attending to the report.

The costs of attending, k, represent the *monetary costs* and *opportunity costs* of attending to news. The monetary costs include the money spent to buy a newspaper, television, or computer and Internet connection. The opportunity costs depend on the value to the audience of the other things that it could be doing. If the audience has little choice other than attending to a report, then its opportunity costs are either low or non-existent (e.g., the value of k can be zero or negative). For example, opportunity costs are low or nonexistent if the audience does not have control of the television remote and are locked in the viewing room with no other entertainment choices – a scenario that most experimental subjects find themselves in when they participate in experiments on media influence (e.g., Iyengar and Kinder, 1987). In this case, the benefits of attending to news (i.e., uncertainty about a particular event) need not be very high to induce attention. If, by contrast, there are many other things to do, such as read other stories, enjoy the company of others, sleep, or earn a living, then opportunity costs are higher. All else constant, higher attention costs imply that a greater justification for attending to news is needed.

The costs and benefits of attending to news will vary across audiences and news organizations. For example, liberals may expect little benefit from attending to Rush Limbaugh's radio show. And, college students' opportunity

Table 1. Comparative statics for the case where the editor is not independent.

Is the audience uncertain enough to pay the costs of attending? ($e > k$)	Does the report contradict the audience's prior belief? ($.5 \geq e$)	Does the reporter care primarily about career goals *or* share common interests with the audience? ($c_r(1 - q_r) < .5$)	Does the editor care primarily about career goals *or* share common interests with the audience? ($c_{ed}(1 - q_{ed}) < .5$)	Is the owner an ideologue? ($q_0 < .5$)	The news organization INFLUENCES the audience	The news organization LEADS the audience
Yes	Yes	Yes	Yes	Yes	√	√
NO	Yes	Yes	Yes	Yes		
Yes	NO	Yes	Yes	Yes		
Yes	Yes	NO	Yes	Yes		
Yes	Yes	Yes	NO	Yes		
Yes	Yes	Yes	Yes	NO	√	

costs on a Friday night may prevent them from ever seeing a Friday broadcast of *20/20*. In both cases, a consideration of the costs and benefits of attending to news is sufficient to prevent even the most powerful news organization from leading, or even influencing, an audience.

Now compare rows 1 and 3. In row 3, the audience attends to the report in question. Leading does not occur in this case, however, because leading and influence require that the report conflict with the audience's prior beliefs. For example, the audience may already believe that crime is the most important problem facing the nation because of a rash of crimes in its neighborhood. In this case, even if a news organization subsequently reports on an increasing crime rate, it can neither influence nor lead the audience to change its assessment of which issue is the most important problem facing the nation.

Now let's move further down the table, to rows 4–6. These rows are important because they represent variations in attributes of news organizations. Each row describes a situation in which a news organization has an attribute that prevents it from leading. This is true even though *an audience that will attend to and be led by a news report if it is offered characterizes all three rows*. Row 5, for example, differs from row 1 only in the attributes of the editor. For leading to occur, a report must be consistent with the editor's career or ideological goals. That this requirement is not satisfied in row 5 is the reason that leading does not occur – regardless of the desires of the audience, reporter, or owner.

Also, recall that for a news organization to lead, the actor at the top of the news organization's hierarchy must be ideologically motivated (the violation of which accounts for no leading in row 6). Thus, if an owner (e.g., Ted Turner, Rupert Murdoch) is primarily motivated to maximize viewership or sales, and if influence occurs as a result of their efforts, it is not a case where leading has occurred (i.e., where ideology determines news content).

In sum, Table 1 highlights some of the many obstacles to influence and leading that our model identifies. Since so many aspects of media decision-making are difficult to observe, a model such as ours can provide an effective way to clarify who can use the power of news and to what ends (also see Noam 1987, Hamilton 1998a for other media models).

2.3. *Related questions*

We contend that organizational and market-oriented models – of which ours is but an example – can provide a useful basis for thinking through broader sets of questions about the political power of news organizations. In this section, we address a few of these questions. For each question, we give a brief, intuitive description of an extension to our model that addresses the question at hand. Then, we answer the question to the best of our current

abilities.

1. What if there are multiple target audiences?
To answer this question, adjust the model as follows. Instead of one target audience, let there be $M > 1$ target audiences, where each target audience is motivated to attend to the news only if it provides entertainment value or allows it to learn whether or not the event occurred. Treat the audiences' actions as independent of one another (i.e., assume that they do not check with each other before deciding whether or not to attend to the news). Then apply a weighting scheme to the goals of each media elite, $i \in \{r, ed, o\}$, where the weight for each audience $m \in M$ is w_i^m. For each audience m, w_i^m is the importance of audience m in media elite i's considerations.

With this augmented model in hand, the main themes of the Influence and Leading Theorems do not change, though the mechanics are different. For any particular report, media elites continue to base their decisions on career goals if the contribution of these goals to their utility is sufficiently large to overwhelm the contribution of their ideological goals. The difference for each media elite is that she must now consider the trade-offs inherent in serving any particular audience. For example, if a news decision would induce an important target audience not to attend to the news, then an owner may take actions that block the report even if the report would increase sales to less important audiences or would lead these audiences to share the owner's ideology. Each audience, for its part, acts much like the single audience in the simple model. The biggest difference is for a small audience, m, who watches the news for instrumental purposes (i.e., $k > 0$) and has an ideology that differs from that of larger audiences. This small audience knows that market forces may induce news organizations to ignore their desires. As a result, these "fringe" audiences do not attend to that organization's news and are not led by it. Of course, if such an audience watches news for non-instrumental purposes (i.e., $k < 0$), then the fact that it is fringe need not affect whether or not it is led.

2. What if the news organization has multiple reporters?
Throughout the text, we refer to the news organization as if it has only one reporter. We choose this language because it is simple, though little changes when you consider the case of multiple reporters. To see why this is true, recall the requirement in the Leading Theorem that the reporter "shares common interests with the audience *or* cares primarily about career goals." If there are multiple reporters, and if no reporter can block the actions of other reporters, then the reporters who are relevant to the theorem are the ones for which the statement above most applies. So, if no reporters share

common interests with the audience or care primarily about career goals, then leading cannot occur because no one has an incentive to file the report. Otherwise, leading is possible. It is important to note, however, that the strongest conclusion to be drawn from such a model is that an increase in the number of reporters does not decrease the likelihood of leading (e.g., if an audience is unwilling to attend to an organization's reports, then increasing the number of reporters cannot affect its ability to lead.)

3. What if the reporter can fabricate events?

In our model, the reporter can only report on events that occurred. We made this modeling choice because news organizations must select a finite number of stories from a near infinite set of possible stories (Gans, 1979: 78). Most media critics worry that this selection process is ideologically biased (see, e.g., Graber, 1993: 6–7). There is less concern that ideologically-driven media elites fabricate events – indeed, they need not fabricate events to exert influence, and doing so would likely jeopardize their credibility.[9]

Nonetheless, fabrication is an option that we could allow reporters in the model to consider. To extend the model to allow fabrication, copy the part of the game tree that follows the occurrence of an event and paste it to follow the part of the tree where an event does not occur. Such an extension, while complicating the statement of our results, would not change their substance significantly. To see why, consider that our model's audience knows the news organization's objectives. So even if fabrication is possible, the audience has no incentive to trust a news organization whose interests conflict with their own (i.e., they know that such an organization has a strong incentive to fabricate). As a result, news organizations with the greatest incentive to fabricate – those who want to mislead – cannot use a fabricated report to do so.

In sum, simply adding the possibility of fabrication to our model has no substantive impact on the results. Indeed, the real danger associated with fabrication derives from the case that follows and would, if also added to the model, make the possibility of fabrication something to worry about.

4. What if the audience is uncertain about news producers' ideological motives?

Many people who think about the media's political power become concerned that news organizations and media elites will abuse their power. In particular, they worry that the media will lead members of the public to act against their own self-interest. A slightly augmented version of our simple model reveals when such an outcome is possible.

Recall that a necessary condition for leading is that the owner (or the editor if she is independent) share common interests with the audience. When such

actors have conflicting interests with the audience they cannot lead. That our simple model produces this outcome follows from the simplifying assumption that the audience *knows* media elites' ideological goals. So, for example, if the audience encounters a news organization whose key decision makers want to do them harm, they know this and do not attend to the organization's news – which negates leading as an outcome. If, however, we relax this simplifying assumption, it is possible to gain some insight about when an audience can be purposefully misled.

Suppose that we augment the model by allowing the audience to be uncertain about media elites' ideological goals. For simplicity, consider the case where the editor is not independent and let the audience be uncertain about the owner's ideology. This augmentation changes the Leading Theorem as follows: where the owner's actual ideology played a role in the initial statement of the theorem, it is now joined by the audience's *perception* of the owner's ideology. In particular, since the audience does not know the owner's (and, in effect, the news organization's) ideology, they must base their beliefs about whether or not the news will provide the information they need on their perceptions (see, e.g., Sobel, 1985).

The consequence of this augmentation to the model is that the audience can be misled when their perceptions do not match reality. For example, suppose that Ted, an audience member, is uncertain about the ideology of a news organization, which we personify as Rupert. If Ted knows that Rupert wants him to believe things that are contrary to his self-interest, then Ted ignores Rupert. But if Ted is uncertain about Rupert's ideology, and incorrectly guesses that he is a liberal comrade rather than an ideological foe, then Rupert can mislead Ted.

Indeed, one important factor that determines whether media elites can lead is their news organization's credibility. So if an audience believes that a news organization's ideology makes it unlikely to provide useful information, then the audience will derive less benefit from attending to that organization's reports and is more likely to ignore it. In the extreme, with no credibility there is no audience (i.e., discounting non-instrumental benefits), and with no audience there is no leading.

5. What if there is more than one news organization?

Perhaps the most important path for future models to pursue is the effect of competition between news organizations on outcomes such as leading. In many of the cases about which scholars are most concerned, there are multiple news organizations that are corporate-owned and compete with each other for market share. In most cases, market share translates into revenues, which, in turn, translate into the ownership group's ability to earn a particular

rate of return. In these cases, greater competition makes achieving high rates of return more difficult. For owners who can transfer their capital from their news organization to a more profitable business endeavor, the presence of multiple competing news organizations would seem to make ideological leading less likely. Put another way, when competition threatens survival, and survival requires an audience, the need to serve the audience trumps ideological desires. In this case, competition should inhibit leading. This is, however, an area ripe for further theoretical study (also see, e.g., Hamilton, 1998a).

3. Conclusion

There are many, distinct barriers to leading. Some media elites are limited in their ability to lead because the news organizations for which they work fail to attract an audience. Other barriers, such as conflicts within the news organization over which events to report (e.g., a conflict between a left-leaning reporter and an owner who cares most about sales to a conservative clientele) also limit leading. Indeed, if media elites want to use the news to shape political discourse to their own purposes, multiple barriers stand in their way.[10]

Our point is not that leading never occurs, or even that cases of leading are unimportant. It is, instead, that the collective nature of news production *and* market pressures can limit even the most powerful media ideologues. For many news organizations and media elites, the limits to leading are severe.

Knowing when media elites can and cannot lead public opinion is an important step towards clear and constructive conversations about the role of the media in politics. For when a news organization leads the public, then it controls the communication channels whose proper operation induce accountability in government. But if the public influences media elites' news content decisions, then news organizations are giving the public what they want.

With this point in mind, our work has the following implication for public and academic discourse about the power of the media. Before offering critiques of the media's role in modern politics, such as charges about the media's liberal or corporate biases, critics should understand who is influencing whom in the domain of their critique. Such an understanding requires more than empirical demonstrations of the media *influencing* the public, or data on media elites' general ideological leanings – the two types of evidence typically offered in debates about media power. It also requires contemplation of how organizational and market pressures shape media elites' incentives. Critics should attempt to differentiate the extent to which markets drive in-

fluential media elites from the extent to which these elites actively work to shape political discourse to their own ideological purposes.

With such an understanding in hand, more constructive critiques can emerge. If, for example, analysts are bothered by the content of news and the data suggest that media elites' ideological agendas prevail over market forces, then changing the news requires changes in the incentive structure of news organizations.[11] However, if analysts are bothered by the content of news but find that public demands determine media decisions, then changing the news requires replacing market forces with a more centralized mechanism of media control – a form of censorship entailing significant dangers of its own.

Notes

1. The same is true of Iyengar and Kinder's (1987) sophisticated experimental demonstrations of media agenda setting. Media elites play no role in the experiments, as it is the experimenters, and not media elites, who choose news content. Thus, the experiments cannot reveal whether or not influence is the product of ideologically motivated media elites leading public opinion.
2. Journalistic or professional norms are sometimes offered as an explanation of how news organizations choose which stories to cover (e.g., covering conflictual, dramatic, or episodic events). Such explanations, however, beg the question we raise. To see why, note that journalistic norms vary across countries, publications, types of news, and over time. Indeed, there is a broad universe of journalistic norms from which any news organization can choose and there is wide variation in the norms that news organizations have chosen – not everyone is the *National Enquirer*. Moreover, the forces that induce news organizations' choices regarding news content – ideological and market forces – are intimately related to the forces that induce norm selection. So, while media elites undoubtedly abide by journalistic norms, these norms are themselves selected and, therefore, beg rather than answer questions about news decisions.
3. For small news organizations, such as an individual or small group publishing a web page, it may be convenient to think of one person playing more than one of the three roles just stated. For large news organizations, more actors than we have described are involved in the production of news. Nevertheless, even in these diverse organizations, the basic structure we describe is valid – for a news report to be produced, someone must engage in fact-finding, someone must judge a report's newsworthiness, and someone is usually responsible for major budgetary decisions.
4. Alternatively, we could have modeled the owner as deciding whether or not to allow a story to appear in the news, or as deciding whether or not to reward the editor and/or reporter (e.g., with a promotion or bonus). However, most owners are not this involved in the day-to-day operations of the news organization. As Gans (1979: 94) explains, owners and news executives "sit outside the news organization... [and] because they have other duties and because they are expected to abide by the corporate division of labor (and when they are nonjournalists, by the informal rules which give autonomy to journalists), they do not exercise their power on a day-to-day basis." Rather, they "exert power through

[major] budget and major personnel decisions" (Gans, 1979: 94, 214–215). We thank an anonymous reviewer for this point.

5. The owner observes the reporter's action. Therefore, the owner does not rely on the editor to monitor the reporter. In some principal-agent contexts, this aspect of the model would remove the importance of distinguishing the reporter and the editor as separate actors. The same is not true in our model for two reasons. First, the editor-reporter distinction is widely-recognized as fundamental to most news organizations. Without this distinction, the news organization we describe would be unrecognizable to a broader readership. Second, the distinction proves useful later in the paper as it allows us to clarify the separate challenges that ownership and editors can pose to an ideological reporter.
6. Here, influence occurs only in one of two cases. In the first case, the market rate of return is so high (low) that the owner maintains her investment (reinvests) regardless of what any actor does. In this case, the editor deems a report newsworthy only if it is consistent with an ideological goal (c_{ed}= common) that she cares about ($q_{ed} < 1$). In the second case, the owner and audience have conflicting interests. Moreover, the owner maintains her investment only if the audience does not see a report about the event. However, the editor has common interests with the audience and cares more about ideology than career payoffs (c_{ed}= common and $q_{ed} < .5$). Therefore, she publishes the influential report despite the fact that doing so leads to reinvestment (and thus a budget cut).
7. Specifically, influence occurs in such a case only if three things are true. First, the owner's ability to earn the market rate of return depends on the audience's behavior. Second, the owner *either* shares common interests with the audience ($c_o = 0$) *or* cares more about earning the market rate of return than influencing the audience ($q_o > .5$). Third, the editor *either* shares common interests with the audience ($c_{ed} = 0$) *or* cares more about earning career payoffs than influencing the audience ($q_{ed} > .5$).
8. Not all stories cause audiences to change their choices. Members of a news organization who want to maintain an audience may have an incentive to produce *non-influential* stories that are consistent with an audience's prior beliefs (i.e., they might just want to sell papers or achieve high ratings). To complete our explanation of how news organizations choose their stories, we must account for the production of non-influential reports as well. To this end, we introduce the *Non-Influential Report Theorem*. This theorem describes a case where all members of a news organization are market driven.

   The Non-Influential Report Theorem:

   The news includes a non-influential report *if and only if* all of the following are true: the audience's prior beliefs *do not* differ from what the news is going to report, the audience is so uncertain about the event that it attends to the news, the reporter and editor both attach some value to career payoffs, AND the owner's decision to maintain her investment depends on the audience's attention decision.

   We do not discuss this result further in the text, as the issuance of a non-influential report is irrelevant to questions of leading.
9. For example, people's confidence in news organizations dropped in 1998 after a few high profile cases where journalists were caught fabricating stories (see *San Diego Union-Tribune*, July 12, 1998.)
10. Leading is difficult even for the most powerful media moguls. Consider, for example, Rupert Murdoch's ploy of running derogatory stories about Edward Kennedy after Kennedy "threatened to disrupt Murdoch's ownership of newspapers and television stations in Boston and New York" (Newton, 1998: A12). Though Murdoch used his papers "in the service of his ambition and interests" (Newton, 1998: A12) – we know of no evid-

ence pertaining to the other necessary conditions for leading (e.g., whether the audience attended to or was influenced by the stories).

11. Most media critics are quick to cite ideological bias (see, e.g., the 1998 report from the Pew Research Center). However, an alternative perspective suggests that the news content generated by market forces is a negative externality, and thus, regulatory steps are appropriate. This is similar to, although perhaps less convincing than, the argument made about television violence (for a penetrating analysis of television violence along these lines, see Hamilton, 1996, 1998a,b,c). Moreover, as Hamilton (1998a: 319) explains, even if there were agreement about a negative externality, arriving at an appropriate regulatory response would be quite difficult.

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Appendix

We use the Perfect Bayesian Equilibrium concept (Fudenberg and Tirole, 1991) to derive our conclusions. The model has two perfect Bayesian equilibria. One is described below. The other is known as a "babbling equilibrium." In a babbling equilibrium, the audience ignores the news and no report is issued. Babbling equilibria regularly exist alongside non-babbling equilibria in economic cheap talk and signaling models (Crawford and Sobel, 1982; Milgrom and Roberts, 1986). Such equilibria provide an important reminder – you have no incentive to influence if you are certain to be ignored and you have no incentive to be influenced if you are certain that news provides no useful information. However, many signaling and cheap talk models have such equilibria even though it is not clear how players would reach them. For example, in any case where the audience and all members of a news organization can benefit from a news report of the event, there exists a babbling equilibrium that leads to a worse outcome for all players than a non-babbling equilibrium. If an accident of nature leads to such behavior in the model, then the "babble-ignore" strategy profile is sustainable. However, we concur with Farrell (1993: 518) who claims that in cases like this, the "babbling equilibrium is implausible. It requires [members of the news organization] ... saying some very unnatural things, not for his own sake but for the sake of the equilibrium." More generally, we focus on non-babbling equilibria because we are interested in determining when media elites and news organizations lead the public. If we allow for the possibility of babbling equilibria, leading is even less likely than we portray in the text.

The equilibrium

The news organization influences the audience and the editor's career goal payoff depends on the audience's behavior *if and only if* $E = 1$ and $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)(1 - c_o)$ and $c_{ed}(1 - q_{ed}) < .5$ and $c_r(1 - q_r) < .5$

The news organization influences the audience and the editor's career goal payoff does not depend on the audience's behavior *if and only if* $E = 1$ and one of the following statements is true:

- $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and [either $t \geq q_o - (1 - q_o)c_o$ or $t < -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$ and $c_r(1 - q_r) < .5$
- $.5 \geq e > k$ and $c_o(1 - q_o) > .5$ and [either $t < q_o - (1 - q_o)c_o$ or $t \geq -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$ and $c_r(1 - q_r) < .5$
- $.5 \geq e > k$ and $c_o(1 - q_o) > .5$ and $-(1 - q_o)(1 - c_o) > t \geq q_o - (1 - q_o)c_o$ and $c_{ed} = 0$ and $q_{ed} < .5$ and $c_r(1 - q_r) < .5$

The news organization issues a non-influential report *if and only if* $E = 1$ and $1 - k > e > .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)c_o$ and $q_{ed} > 0$ and $q_r > 0$.

Otherwise, there is no report. In this case, $P = 1$ if $e > .5$, and $P = 0$ if $e \leq .5$

The *Influence Theorem* is the first two statements of the equilibrium, *the Non-Influential Report Theorem* is the third statement, and The Leading Theorem follows straightforwardly from the *Influence Theorem*. Therefore, the proof of the equilibrium is sufficient to prove the theorems.

Proof

We prove the equilibrium by deriving each player's optimal strategy at every information set. We start at the end of the game and work backwards. We begin with the owner's decision. From the assumption that the owner uses a trigger point strategy, we know that if $q_oA - (1 - q_o)(|c_o - |P - E||) > t$, then $J = 1$; and if $q_oA - (1 - q_o)(|c_o - |P - E||) \leq t$, then $J = 0$. The owner's choice depends, therefore, on her information set. At information set $A = P = 1$, $J = 1$ iff $q_o - (1 - q_o)(|c_o + E - 1|) > t$. At information set $A = 1, P = 0$, $J = 1$ iff $q_o - (1 - q_o)(|c_o - E|) > t$. At information set $A = 0, P = 1$, $J = 1$ iff $-(1 - q_o)(|c_o + E - 1|) > t$. And at information set $A = P = 0, J = 1$ iff $-(1 - q_o)(|c_o - E|) > t$.

To determine the conditions under which the owner is at each information set, we turn our attention to the game's prior stage – the audience's prediction. When the audience makes a prediction, it is at one of three information sets: $A = 1, N = 1$; $A = 1, N = 0$; or $A = 0$. Information set $A = 0$ is reached only if the audience chose not to attend to the signal in the previous stage of the game. In this case, the audience's prediction can be based only on its prior beliefs. Therefore, the expected utility from $P = 1$ given $A = 0$ is $[0^*e] + [-1^*(1 - e)]$ or $e - 1$ and the expected utility from $P = 0$ given $A = 0$ is $[-1^*e] - [0^*(1 - e)]$ or $-e$. Thus, at information set $A = 0$, the audience should choose $P = 1$ only if $e > .5$.

Information set $A = 1, N = 1$ is reached only if $E = 1$. Therefore, the audience can make a correct prediction, the utility from $P = 1$ given $A = 1, N = 1$ is $-k$, and the utility from $P = 0$ given $A = 1, N = 1$ is $-1 - k$. Thus, at information set $A = 1, N = 1$, the audience should choose $P = 1$.

Given $A = 1$, the information set $A = 1, N = 0$ can be reached in one of three ways. First, the event did not occur, $E = 0$. The prior probability of this event is $1 - e$. Second, the reporter chose not to send a signal about the event, $E = 1, S = 0$. Let $\pi_r(S = 1; E = 1) = \Sigma \in \{0, 1\}$ be the endogenously determined probability that the reporter chooses $S = 1$. The prior probability of this circumstance is $e(1 - \Sigma)$. Third, the editor did not deem the signal newsworthy, $E = 1, S = 1, N = 0$. Let $\pi_{ed}(N = 1; S = 1) = \Omega \in \{0, 1\}$ be the endogenously determined probability that the editor chooses $N = 1$. The prior probability of this circumstance is $e\Sigma(1 - \Omega)$. Therefore, the conditional probability of $A = 1, N = 0$ given $A = 1$ is $1 - e + [e(1 - \Sigma)] + e\Sigma(1 - \Omega)$ or $1 - e\Sigma\Omega$. Thus, the expected utility from $P = 1$ given $A = 1, N = 0$ is $-k + (e - 1)/(1 - e\Sigma\Omega)$ and the expected utility from $P = 0$ given $A = 1, N = 0$ is $-k + (e\Sigma\Omega - e)/(1 - e\Sigma\Omega)$. Thus, at information set $A = 1, N = 0$, the audience should choose $P = 1$ only if $e > 1/(2 - \Sigma\Omega)$. To determine the conditions under which the audience is at each information set, we proceed to the game's prior stage – the audience's attention decision.

When the audience chooses whether or not to attend to the signal, there is only one information set. To see why, recall that the audience observes neither E, S, nor N when it chooses A. Note also that the audience's expected utility from its attention decision depends on what it expects to predict in the next stage of the game. If the audience chooses $A = 0$, then its prediction depends only on prior beliefs e. From the specification of the audience's prediction strategy at information set $A = 0$, we know that if $e > .5$, then the audience chooses $P = 1$ and its expected utility is $e - 1$ and if $e \leq .5$, then the audience chooses $P = 0$ and its expected utility is $-e$.

If the audience chooses $A = 1$, then its prediction depends on prior beliefs e, anticipated reporter strategy Σ, and anticipated editor strategy Ω. With probability $e\Sigma\Omega$, $A = 1$ leads to information set $A = 1, N = 1$. At this information set, the audience knows that $E = 1$ and its subsequent utility is $-k$. With probability $1 - e\Sigma\Omega$, $A = 1$ leads to $A = 1, N = 0$. If $e > 1/(2 - \Sigma\Omega)$ then its expected utility at this information set is $-k + ((e - 1)/(1 - e\Sigma\Omega))$. If $e \leq 1/(2 - \Sigma\Omega)$ then its expected utility at this information set is $-k + ((e\Sigma\Omega - e)/(1 - e\Sigma\Omega))$. So, from the specification of the audience's prediction strategy at information sets $A = 1, N = 0$ and $A = 1, N = 1$, we know that if $e > 1/(2 - \Sigma\Omega)$, then the audience chooses $P = 1$ and its expected utility is $-k + ((e - 1)/(1 - e\Sigma\Omega))$. If $e \leq 1/(2 - \Sigma\Omega)$, then the audience chooses $P = 0$ and its expected utility is $-k + ((e\Sigma\Omega - e)/(1 - e\Sigma\Omega))$.

To determine the attention strategy, it remains to state the conditions under which the expected utility from $A = 1$ is higher than the expected utility from $A = 0$. From the specifications in the previous two paragraphs, we can see that the relevant ranges are $e \leq .5$, $1/(2 - \Sigma\Omega) \geq e > .5$, and $e > 1/(2 - \Sigma\Omega)$. To see why these three ranges are exhaustive, note that the minimum possible value of $1/(2 - \Sigma\Omega)$ is .5. Recall that the reporter and editor choose pure strategies. Therefore, in equilibrium, $A = 1$ is possible only if $\Sigma\Omega = 1$. Otherwise, the audience knows that the news provides no information about the event and derives no benefit from attending to the news. Thus, in equilibrium, the audience chooses $A = 1$ if and only if $k < 0$ or ($\Sigma = \Omega = 1$ and either $.5 \geq e > k$ or $1 - k > e > .5$). In the first case, the non-instrumental benefits of attending to news are so large that audience does not condition its attention decision on its beliefs about media elites' actions. Otherwise, it does condition its decision. Therefore, to prove the rest of the equilibrium, we must determine when $\Sigma = \Omega = 1$. We begin by proceeding to the previous stage of the game – the editor's decision.

Recall that the editor participates only if the reporter sends a signal. Therefore, when the editor chooses, there is only one possible information set ($S = 1, E = 1$). As a result $U_{ed} = q_{ed}J - (1 - q_{ed})(|c_{ed} - |P - 1||)$. It remains to determine how the editor's choice affects P and J, which itself depends on P and A. Note that the editor faces one of two situations, one in which she can influence the audience's (and hence the owner's) choices and one in which she cannot. If neither $.5 \geq e > k$ nor $1 - k > e > .5$, then the audience will not attend to the news and the editor cannot influence her own payoff. In either case, the editor chooses $N = 0$. It remains to derive the editor's choice when either $.5 \geq e > k$ or $1 - k > e > .5$.

If $N = 0$, then $\Omega = 0$. If $\Omega = 0$ in equilibrium, then $A = 0$. If $A = 0$, then "the audience chooses $P = 1$ only if $e > .5$." Therefore,

- if $N = 0$ and $e > .5$, and $-(1 - q_o)c_o > t$, then $U_{ed} = q_{ed} - (1 - q_{ed})c_{ed}$.
- if $N = 0$ and $e > .5$, and $-(1 - q_o)c_o \leq t$, then $U_{ed} = -(1 - q_{ed})c_{ed}$.
- if $N = 0$ and $e \leq .5$, and $-(1-q_o)(1-c_o) > t$, then $U_{ed} = q_{ed} - (1-q_{ed})(1-c_{ed})$.
- if $N = 0$ and $e \leq .5$, and $-(1-q_o)(1-c_o) \leq t$, then $U_{ed} = -(1-q_{ed})(1-c_{ed})$.

If $N = 1$, then $\Omega = 1$. If $\Omega = 1$ in equilibrium and if either $.5 \geq e > k$ or $1 - k > e > .5$., then $A = 1$. If $A = 1$, then "the audience chooses $P = 1$." Therefore,

- if $N = 1$ and $q_o - (1 - q_o)c_o > t$, then $U_{ed} = q_{ed} - (1 - q_{ed})c_{ed}$
- if $N = 1$ and $q_o - (1 - q_o)c_o \leq t$, then $U_{ed} = -(1 - q_{ed})c_{ed}$

Thus, the editor chooses N=1 only if one of the following statements is true:

- $1 - k > e > .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)c_o$ and $q_{ed} > 0$.
- $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and [either $t \geq q_o - (1 - q_o)c_o$ or $t < -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$.
- $.5 \geq e > k$ and $c_o(1 - q_o) > .5$ and [either $t < q_o - (1 - q_o)c_o$ or $t \geq -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$.
- $.5 \geq e > k$ and $c_o(1 - q_o) > .5$ and $-(1 - q_o)(1 - c_o) > t \geq q_o - (1 - q_o)c_o$ and $c_{ed} = 0$ and $q_{ed} < .5$.
- $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)(1 - c_o)$ and $c_{ed}(1 - q_{ed}) < .5$

To determine whether the editor gets to participate, we turn to the game's initial stage – the reporter's move. The reporter participates only if $E = 1$. As a result, $U_r = q_r N - (1 - q_r)(|c_r - |P - 1||)$. It remains to determine how the editor's choice affects P and N. If the reporter's choice leads to $N = 0$, then, in equilibrium, $A = 0$. If $A = 0$, then "the audience chooses $P = 1$ only if $e > .5$." From our analysis of the editor's decision, we know the conditions under which $N = 1$. Therefore, if $S = 0$ and $e > .5$, then $U_r = -(1 - q_r)c_r$. And if $S = 0$ and $e \leq .5$, then $U_r = -(1 - q_r)(1 - c_r)$.

If $S = 1$ and $N = 1$, then $\Sigma\Omega = 1$. If $\Sigma\Omega = 1$ and if either $.5 \geq e > k$ or $1 - k > e > .5$., then, in equilibrium, $A = 1$. If $A = 1$, then "the audience chooses $P = 1$." Therefore, if $S = 1$ and $N = 1$, then $U_r = q_r - (1 - q_r)c_r$ Thus, the reporter chooses $S = 1$ only if one of the following statements is true:

- $1 - k > e > .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)c_o$ and $q_{ed} > 0$ and $q_r > 0$.
- $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and [either $t \geq q_o - (1 - q_o)c_o$ or $t < -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$ and $c_r(1 - q_r) < .5$.
- $.5 \geq e > k$ and $c_o(1 - q_o) > .5$ and [either $t < q_o - (1 - q_o)c_o$ or $t \geq -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$ and $c_r(1 - q_r) < .5$.
- $.5 \geq e > k$ and $c_o(1 - q_o) > .5$ and $-(1 - q_o)(1 - c_o) > t \geq q_o - (1 - q_o)c_o$ and $c_{ed} = 0$ and $q_{ed} < .5$ and $c_r(1 - q_r) < .5$.

- $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)(1 - c_o)$ and $c_{ed}(1 - q_{ed}) < .5$ and $c_r(1 - q_r) < .5$.

To complete the proof, we must demonstrate that for each N that is along the path of play, $\pi_p(P; N)$ maximizes the audience's expected utility given $\mu(E = 1|N)$, where μ is computed from π_{-p} by Bayes' rule. For $N = 1$, in equilibrium, Bayes rule implies the following:

$$p(E = 1|N = 1) = \frac{p(N = 1|E = 1)p(E = 1)}{p(N = 1|E = 1)p(E = 1) + p(N = 1|E = 0)p(E = 0)} = \frac{e}{e} = 1$$

Therefore, when $N = 1$, the expected utility of $P = 1$ is $-k$ and the expected utility of $P = 0$ is $-1 - k$. Since the audience chooses $P = 1$ at information set $A = 1$, $N = 1$, its equilibrium prediction strategy satisfies the requirement. Similar logic reveals that $p(E = 1|N = 0) = e$ and that the requirement is satisfied for $N = 0$. Q.E.D.

A formal statement of the Influence Theorem:

The news organization influences the audience and the owner affects content *if and only if* the event occurs and $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)(1 - c_o)$ and $c_{ed}(1 - q_{ed}) < .5$ and $c_r(1 - q_r) < .5$
The news organization influences the audience and the editor is independent *if and only if* the event occurs and $.5 \geq e > k$ and $c_r(1 - q_r) < .5$ and one of the following statements is true:

- $c_o(1 - q_o) < .5$ and [either $t \geq q_o - (1 - q_o)c_o$ or $t < -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$
- $c_o(1 - q_o) > .5$ and [either $t < q_o - (1 - q_o)c_o$ or $t \geq -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$ and $q_{ed} < 1$
- $c_o(1 - q_o) > .5$ and $-(1 - q_o)(1 - c_o) > t \geq q_o - (1 - q_o)c_o$ and $c_{ed} = 0$ and $q_{ed} < .5$.

A formal statement of the Leading Theorem:

The news organization leads the audience and the owner affects content *if and only if* the event occurs and $.5 \geq e > k$ and $c_o(1 - q_o) < .5$ and $q_o - (1 - q_o)c_o > t \geq -(1 - q_o)(1 - c_o)$ and $c_{ed}(1 - q_{ed}) < .5$ and $c_r(1 - q_r) < .5$ and $q_o < .5$.
The news organization leads the audience and the editor is independent *if and only if* the event occurs and $.5 \geq e > k$ and $c_r(1 - q_r) < .5$ and $q_{ed} < .5$ and one of the following statements is true:

- $c_o(1 - q_o) < .5$ and [either $t \geq q_o - (1 - q_o)c_o$ or $t < -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$
- $c_o(1 - q_o) > .5$ and [either $t < q_o - (1 - q_o)c_o$ or $t \geq -(1 - q_o)(1 - c_o)$] and $c_{ed} < .5$
- $c_o(1 - q_o) > .5$ and $-(1 - q_o)(1 - c_o) > t \geq q_o - (1 - q_o)c_o$ and $c_{ed} = 0$.