We present a game-theoretic model of political discourse that explores how strategic incentives to make potentially persuasive arguments vary across different informational contexts. We show that political sophistication of the listeners fundamentally affects the speakers’ incentives to make informative arguments, increasing the informed speech for speakers who are less likely to be successful in carrying the majority of the audience, and with it, the expected epistemic quality of majority choices. (JEL: D7, D8)

1 Introduction

Political contestation in democracies unfolds with respect to two key channels: persuasion and voting. This paper is about the relationship between them, and in particular, about how that relationship is mediated by behavioral attributes of voters that are orthogonal to their ideological predilections – the more traditional focus of political economy analyses. The primary question we address is how the voters’ sophistication – their ability to interpret effectively the arguments they may hear from policy advocates – influences the incentives of those advocates to engage in informative argumentation.

Our model of persuasion is one that we believe is particularly suitable for studying political discourses: it is a model of communication between advocates for a particular policy position or set of positions, perhaps identified with a particular political candidate, and voters who are making the ultimate decision on whether those positions are to be implemented. Advocates choose whether to make arguments in favor of their preferred positions – arguments that may be convincing to some, but not necessarily to all voters. They make these choices in an environment in which there is (potentially considerable) uncertainty about whose ears their arguments will, ultimately, reach, and what other advocates their ultimate audiences may, in the end, be exposed to and take time to hear out.

* Associate Professors of Politics at New York University, Dimitri Landa is the corresponding author. We are grateful for comments from and discussions with the participants in the 30th International Seminar on the New Institutional Economics on the Behavioral Theory of Institutions, Bruges.
Both the “advocates” (speakers) and the “voters” (listeners or audience members) have a stake in the policy choice to be made. Advocacy can potentially improve the advocates’ welfare if the arguments they offer to the voters are found compelling, thereby causing voters to update their beliefs about which choices are ultimately better or worse for themselves – in the direction preferred by the advocates. But advocacy can also backfire: an argument that does not resonate with the audience may do worse than fail to move the audience closer to the advocates’ preferred position; it may, indeed, move it farther away by convincing it that it is less likely to prefer the advocated policy position than previously thought. Because policy choices are binding and advocates are policy-motivated, advocates face strategic incentives to choose their speech in a way that maximizes the expected proximity of voters’ ultimate choices to the choices that speakers would prefer be made on the issue at hand.1

A central aspect of voter sophistication is the ability to interpret the political discourse – to understand what the arguments that the voter is exposed to really say. As such, it fundamentally affects the incentives facing the speakers and the deliberative decisions that speakers can be expected to make. Indeed, we show that the equilibrium consequences of the interaction between voter sophistication and speakers’ incentives offer an explanation for one of the key puzzles identified by scholars of voting behavior in democratic societies: the gap between the relative political unsophistication of the voters on the individual level and the relative sophistication and coherence of macro-political outcomes induced by electoral incentives (see, e.g., MacKuen, Erikson, and Stimson, 1992; Lupia and McCubbins, 1998). We show that the greater sophistication of listeners tends to discourage argument-making, and, perhaps surprisingly, may result in worse choices. In contrast, the greater presence of unsophisticated voters weakly increases information revelation in equilibrium, thus increasing the likelihood that policy decisions made by such voters are, in fact, well-informed.

The paper is organized as follows. In section 2, we discuss related literature on communication. Section 3 introduces the key elements of our formal model, including our parameterizations of audience sophistication. In section 4, we present equilibrium analysis of our formal model. Section 5 concludes with a brief discussion. Proofs of our formal results appear in an appendix.

2 Political Economy of Communication and Advocacy

The economic literature on communication has focused primarily on the analysis of cheap-talk models of information transmission, in which the key question of interest

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1 Examples in recent political debates include familiar arguments about legalization of same-sex marriage, abortion rights, euthanasia, the justice of economic redistribution, etc. Another domain of examples is history of political thought, where theorists such as Hobbes or Rousseau may be seen as engaging in advocacy on behalf of their preferred political order. We thank Christoph Engel for suggesting to us the latter set of examples.
is the conditions under which the senders are willing and able to reveal more or less coarse information to the receivers (Crawford and Sobel, 1982; Battaglini, 2002; Meirowitz, 2006; Gerardi and Yariv, 2006; Austen-Smith and Feddersen, 2006). In such models, the messages transmitted are “cheap” both in the sense of not costing anything to the sender and in that they are “merely” unverifiable “talk.”

The approach closer to the present paper is that of the models of verifiable messages, in which senders can supply (partial) proofs for their signals and in which the veridicality (truth content) of a message is the same for all types of receivers (Lipman and Seppi, 1995; Glazer and Rubinstein, 2001, 2006; Landa and Meirowitz, 2009; Mathis, 2011). While the present model can be interpreted as one with verifiable (provable) messages, the veridicality of messages we model differs across receivers, and when they reject the proof (that is, when the arguments are not convincing), the messages received may still have informational content that is either exogenously fixed or, as in cheap-talk models, endogenously derived from the equilibrium incentives of the players.

The closest models to the one developed in the present paper are Hafer and Landa (2007, 2008), Dickson, Hafer, and Landa (2008), and Hummel (2012). The first three papers analyze related models with argumentation that, like in the present model, satisfies full provability and private veridicality but, unlike the current model, impose an exogenously fixed, degenerate distribution on the meaning of unpersuasive arguments. Also, unlike the current model’s focus, their focus is on the informational effects of institutions affecting the speaker’s access to the audience and of preference aggregation rules, respectively. Hummel builds on the argumentation technology in the Hafer and Landa papers and introduces electoral competition with candidates taking positions before arguments regarding them are revealed to the voters, showing divergence in candidate platforms in two-candidate winner-take-all elections.

The literature on the political economy of advocacy includes seminal papers by Calvert (1985) and Dewatripont and Tirole (1999). Calvert shows that advice from a biased rather than a neutral source can be more informative, thus improving the quality of choices by the decision-maker. Dewatripont and Tirole focus on organizations’ incentives to create advocates and show that the incentives imparted to advocates motivate them in a way that can promote the quality of decision-making. Consistent with the overall approach of those papers, the advocates we model face incentives to reveal or withhold information depending on their expectations for the response from the receiver. Unlike those papers and the substantial literature influenced by them, our setting is that in which evidence provided by the advocates can be contentious, and our primary aim is to study how the advocates’ incentives vary with the receivers’ capacity for making sense of the advocates’ testimonies when they find them broadly unpersuasive.

3 The Model

Let the population of agents consist of a set of senders/speakers $S = \{1, 2\}$, and a continuum on the unit interval of receivers/listeners $R$ of mass 1. The basic
sequence of the interactions we analyze includes first private (publicly unobserved) communication from senders to receivers and then belief updating and policy choice by the receivers determined by a majority vote. (Note that private communication here is equivalent to the communication in which the senders cannot be sure from what other type of sender the receivers will be getting a message.)

A receiver $i \in R$ chooses a vote $v_i \in [0, 1]$. For simplicity, we assume that only receivers cast votes after the communication stage. However, both senders and receivers have ideal points in the action space. In particular, for $i \in S \cup R$, $\hat{\pi}_i \in \{0, 1\}$ is $i$'s ideal action, which we will refer to as $i$'s type. We suppose that receivers’ ideal points are unknown even to the receivers themselves, so that the value of debate (for the receivers) is to discover that information.\footnote{Consistent with the notion of argumentation discussed above, we could interpret each receiver’s ideal action choice to be a function of the argument/reason she finds convincing. If a receiver learns such an argument in debate, she then learns her preferred policy choice. To avoid proliferating notation, in what follows we are suppressing a mapping from reasons into policies, and model the effects of speeches on policy preferences directly, with the understanding that potentially informative speeches consist of potentially persuasive arguments/reasons.} For simplicity, we assume, further, that each receiver knows her ideal point, but, like the receivers, does not know the type of the other speaker. The relevant interpretation is that senders are issue position advocates operating in a space where a listener may, at different times and places, be exposed to multiple advocates, who may be on the same or on the opposite sides of the issue at hand.

Let $\varphi \in [0, 1]$ be a common prior probability assigned to any given speaker $j \in S$ being of type $\hat{\pi}_j = 1$, $\varphi = \Pr(\hat{\pi}_j = 1)$. Let $\theta_i \in [0, 1]$ be the probability that $\hat{\pi}_i = 1$ for $i \in R$ and let $p_\theta(\cdot)$ be the probability density function of $\theta$ in the population of receivers. We assume that $p_\theta(\cdot)$ is continuous and atomless. The types for each speaker $j$ and receiver $i$ are independent draws from their respective distributions.

Let $v_m$ be the outcome of the majority-rule voting. Adopting the standard quadratic loss function, we have

$$u_i(\hat{\pi}_i, \pi_i; m) = -(\hat{\pi}_i - v_m)^2$$

for all $i \in S \cup R$.

For each speaker $i$, a speech $s_i$ is a choice from a set $\{\hat{\pi}_i, x\}$. We interpret a choice $\hat{\pi}_i$ as representing a decision by $i$ to communicate an argument that she finds convincing.\footnote{In the course of the paper, we use the term “choose to speak” as equivalent to “choose $\hat{\pi}_i$ as opposed to $x$.”} We interpret a choice $x$ as silence or as an uninformative or irrelevant remark, e.g., “this is a great country.”

Our model of learning from speech distinguishes between three kinds of events. First, a receiver $i$ may hear a speech that corresponds to her type, $s_j = \hat{\pi}_j$. In this case, she learns her type $(\hat{\pi}_j)$ with certainty. In this sense, a receiver could be said to learn directly from receipt of an argument that she finds convincing. As such, from the perspective of a particular receiver, persuasiveness is an intrinsic quality of an argument. Note that this is in contrast to informative communication in cheap-
talk games, in which the persuasiveness of a message is, in equilibrium, a function
of the identity or preferences of the speaker and not of the nominal content of the
message. Second, a receiver $i$ may hear speech $s_j = x$. In this case, she learns nothing
new about her own type $\hat{\pi}_i$. To be sure, observing $s_j = x$ may, in equilibrium, be
informative regarding the type of the speaker $\hat{\pi}_j$, but since $s_j = x$ does not allow
the receiver to learn whether $\hat{\pi}_j = \hat{\pi}_i$ or $\hat{\pi}_j \neq \hat{\pi}_i$, it does not reveal any information
about the receiver’s type $\hat{\pi}_i$.

The third kind of event corresponds to the receiver hearing a speech $s_j \neq \hat{\pi}_i$ and
$s_j \neq x$ – that is, a speech containing a non-vacuous argument that she does not find
persuasive. In this case, the extent to which it is possible for her to learn about
her type $\hat{\pi}_i$ will depend on her ability to ascertain the meaning of the unpersuasive
argument and infer her own type, given the context of the interaction. We abstract
away from the possibility of inferences about $\hat{\pi}_i$ from equilibrium strategy, which
is the focus of models of cheap-talk signaling, in which the meaning of utterances
depends on receivers’ inferences about senders’ preferences and choices. Instead, we
focus solely on receiver sophistication, which we introduce as a distinct dimension
of receiver type. Let $q_i$ represent the likelihood with which receiver $i$ can identify
the meaning of an unpersuasive argument directly upon hearing it. In particular,
assume that when $s_j \neq \hat{\pi}_i$ and $s_j \neq x$, receiver $i$ observes the value of $s_j$ directly with
probability $q_i$, but cannot do so with probability $(1 - q_i)$. As such, with probability $q_i$,
receipt of an unconvincing (non-empty) message $s_j$ will lead a receiver to learn
that her type is $\hat{\pi}_i = 1 - s_j$ with certainty. With probability $(1 - q_i)$, it will not
enable her to learn anything, and no updating will occur. Note that this means that
receivers do not make inferences about $s_j$ from speakers’ equilibrium strategies.
Allowing the receivers to make such an inference does not change the flavor of
the results, and in particular, the effect of sophistication on speakers’ incentives.\(^4\)

One may think of $q_i$ as a measure of $i$’s ability to place a received argument in the
context of a policy debate and recognize the implications of being unpersuaded by
it for one’s support of the particular policy positions. A different way of modeling
receiver sophistication would be to introduce speaker-specific values of $\phi$, and in-
terpret how close those values are to 1 or 0 as reflecting the receiver’s knowledge of
political process: of the speakers’ distinct places in social and political networks, of
their willingness to buck or follow “the party line,” etc. The first aspect of political
sophistication invoked above (underlying variations in $q$) corresponds naturally to
the notion of systematic processing prevalent in the political psychology analysis of
persuasion. The second aspect (underlying variations in $\phi$) corresponds to heuristic
processing, which in political psychology work is typically understood to be a less

\(^4\) We maintain the current assumption in the paper for consistency with the inter-
pretation of $q$ as a measure of listener sophistication; lack of sophistication seems at
odds with the substantive interpretations of the knowledge and correct inferences from
the speakers’ strategies (note that sophisticated listeners are assumed to obtain that in-
formation directly). We thank Fabian Herweg for useful discussion of this point.
sophisticated mode (Chaiken, 1980). Note that although \( \varphi \) and \( q \) are logically distinct, they are closely linked: values of \( \varphi \) that are moving away from 0.5 and close to 1 and 0 would make having a higher \( q \) less important for the receiver, indicating their substitutability as aspects of sophistication. In the interests of parsimony, our model focuses on \( q \)-driven sophistication, with substantive implications extending to the model of \( \varphi \)-driven sophistication.

4 Equilibrium Analysis

4.1 Solution Concept

Throughout, our equilibrium concept requires that the strategies chosen include only undominated actions and be sequentially rational, given beliefs at the time of action. It is common knowledge that voters update their beliefs in response to new information in the manner described above and formally below, and that the outcome of voting \( v_m \) is a majority-rule core. Given that individual preferences are single-peaked, the core is non-empty, unique, and coincides with the expected most-preferred alternative of the post-communication median receiver. Because the solution concept rules out weakly dominated actions and it is optimal for the receivers \( i \in R \) to vote sincerely, \( v_i = \Pr(\hat{\pi}_i = 1 \mid \cdot) \). Anticipating voter learning and behavior, the speakers play a simultaneous-move Bayesian game. In what follows, we identify the Bayesian equilibria in undominated strategies for this game.

4.2 Voter Beliefs and Voting Outcomes

Let \( E \) be the set of observationally and relevantly distinct speech events from a receiver’s perspective. The following possible mutually exclusive events comprise \( E \):

5 Note that it is not possible to observe \( s_j = \hat{\pi}_i = 1 \) and \( s_k = \hat{\pi}_i = 0 \).
the post-debate median is likely to turn out being. We will refer to that agent as the expected ex post median, as distinct from the ex ante median – the median agent prior to debate or in the case of fully uninformative debate. Note that the debate can change the identity of the median (that is, the ex ante median need not be the expected ex post median) without necessarily changing the beliefs of either of them. When the speech is expected to be persuasive to the ex post median, her expected preferred policy is straightforward: it is, depending on that speech, either 0 or 1. We next define the identity of that agent for cases in which she is unpersuaded.

Let \( m \) be the expected policy choice of the ex ante median, \( m_0 \) be the expected policy choice of the post-debate median when only 0-speeches are made and \( E[\theta] > 1/2 > qE[\theta] \), and \( m_1 \) be the expected policy choices of the post-debate median when only 1-speeches are made and \( (1 - E[\theta]) > 1/2 > q(1 - E[\theta]) \). In all other cases, the expected policy choice of the post-debate median is 0 or 1. Let \( P_\theta(\cdot) \) be the cumulative distribution function \( P_\theta(y) = \int_0^y p(\theta) d\theta \). The ex ante median policy position is \( m \), such that \( P_\theta(m) = 1/2 \). The expected median policy position after only 0-speeches are made and \( E[\theta] > 1/2 > qE[\theta] \) is \( m_0 \) such that

\[
\int_0^1 (1 - \theta) p(\theta) d\theta + \int_0^{m_0} (1 - q)\theta p(\theta) d\theta = \frac{1}{2}.
\]

The expected median policy position after only 1-speeches are made and \( (1 - E[\theta]) > 1/2 > q(1 - E[\theta]) \) is \( m_1 \) such that

\[
\int_0^1 \theta p(\theta) d\theta + \int_0^{m_1} (1 - q)(1 - \theta) p(\theta) d\theta = \frac{1}{2}.
\]

4.3 Speaker Behavior

Our first result is a lemma characterizing speakers’ unique weakly dominant strategies.

**Lemma**: Both types have unique weakly dominant actions:

1. For type 0, (a) speak if \( E[\theta] \leq 1/2 \), and if \( 1/2 < E[\theta] < 1/2q \) and \( m_0 < m \); (b) be silent if \( E[\theta] \geq 1/2q \), and if \( 1/2 < E[\theta] < 1/2q \) and \( m_0 > m \).
2. For type 1, (a) speak if \( E[\theta] \geq 1/2 \), and if \( 1 - 1/2q < E[\theta] < 1/2 \) and \( m_1 > m \); (b) be silent if \( E[\theta] \leq 1 - 1/2q \), and if \( 1 - 1/2q < E[\theta] < 1/2 \) and \( m_1 < m \).

4.3.1 Uninformative Discourse

We begin our analysis of equilibrium phenomena with that of uninformative discourses – discourses in which neither type of speaker makes arguments, i.e., \( s = x \) for all \( \pi_j \), for all \( j \). The following proposition shows that such discourses cannot be in equilibrium:

**Proposition 1 (Uninformative Discourse)** There exists no vector of parameters that can support uninformative discourse in equilibrium.
The incentive compatibility constraints that support any kind of discourse in equilibrium depend on the post-discourse median voter’s policy preference. Under majority rule, there is always a type that will prefer to speak, viz., the type who expects to persuade at least half of the voters (given everyone else is silent).

4.3.2 Universal Discourse

A contrasting phenomenon to that of uninformative discourse is what we refer to as the universal discourse. In such a discourse, both types of both speakers make arguments and the receivers are most likely to have the opportunity to learn their respective most preferred policy positions with certainty and directly. Note though, that universal discourse need not imply full argument revelation, as both speakers could, in fact, be of the same type.

The following proposition provides interpretable sufficient conditions for the equilibrium universal discourse:

**PROPOSITION 2 (UNIVERSAL DISCOURSE)** All types of speaker speak in equilibrium if either (1) $1/2 \leq E[\theta] < 1/2q$ and $m_0 < m$; or (2) $1 - 1/2q < E[\theta] \leq 1/2$ and $m_1 > m$.

In case (1), the policy outcome is 1 if at least one speaker is 1-type, and 0 otherwise. In case (2), the outcome is 0 if at least one speaker is 0-type, and 1 otherwise.

To understand an intuition behind this result, consider the case $1 - 1/2q < E[\theta] \leq 1/2$. Type 0 strictly prefers to speak because she will persuade more than half the voters, and if the only speech the voters were to hear is 1, fewer than half would infer that their type was 0, and the post-discourse median voter would be an unsophisticated unpersuaded voter. Type 1’s behavior has no effect on the outcome when the other speaker is 0-type, but if the other speaker is also 1-type, then her speech affects the identity of the median voter. In this case, if the median, who is unpersuaded by speech 1 but is unable to observe its content, is a higher type than the ex ante median voter, then type 1 prefers to speak. Put differently, if more voters adopt 1 than 0 as a result of a 1-speech, then the post-debate (uninformed) median voter is a higher type than the ex ante median voter. The symmetric argument applies for $1/2 \leq E[\theta] \leq 1/2q$.

4.3.3 One-Sided Discourse

Finally, we consider the possibility of the one-sided discourse – a discourse in which the incentives are such that only one side of the issue is being voiced. For this kind of discourse, speech is always on the path of play, but now receivers can infer from $s^*$ the content of an unpersuasive message, even if they do not observe it directly. There are two possible candidate profiles for such a discourse in our model: (1) $s_j(1) = 1$, $s_j(0) = x \forall j \in S$ and (2) $s_j(1) = x, s_j(0) = 0 \forall j \in S$. The Figure (see p. 148) shows equilibrium outcomes associated with the possible values of $E[\theta]$ and average $q$ under these strategy profiles.
The following proposition summarizes the conditions under which such a discourse can be supported in equilibrium:

**Proposition 3 (One-sided Discourse)** (1) If $E[θ] ≤ 1 − 1/2q$, or if $1 − 1/2q < E[θ] < 1/2$ and $m_1 < m$, then 0-type speakers speak and 1-type are silent in equilibrium; the policy outcome is $m$ if both speakers are 1-type and 0-type otherwise.

(2) If $E[θ] ≥ 1/2q$, or if $1/2q < E[θ] < 1/2q$ and $m_0 > m$ then 0-type speakers are silent and 1-type speak in equilibrium; the policy outcome is $m$ if both speakers are 0-type and 1-type otherwise.

To see the intuition for this result, consider the profile $s_j(1) = 1, s_j(0) = x$—that is, 1-type speakers speak and 0-type are silent. If $E[θ] ≥ 1/2$, a 1-type speaker prefers to speak because he will persuade more than half the voters to adopt position 1. Thus, $s_j(1) = x$ is not incentive-compatible. If $qE[θ] ≥ 1/2$, then if 0 were to speak and both speakers were 0-type, more than half the voters would disagree with 0 and conclude that they should adopt position 1. Thus, 0 prefers silence. If $qE[θ] < 1/2$, then if both speakers are 0-type and one of them speaks, the post-debate median voter will be unpersuaded and unsophisticated. Thus, 0 prefers speaking if and only if that median is a lower type than the ex ante median, i.e., if more voters adopt 0 than 1 as a result of speech 0.

5 Discussion: The Benefits of Lower Sophistication

When engaging in debate, how do agents choose when to communicate their “best arguments” (and when not to)? How are agents’ choices affected by the environment in which debate takes place — if they are indeed affected at all?

To address these questions, we develop a game-theoretic model of debate, in which speakers may attempt to influence voters. We trace speakers’ incentives to make arguments as we vary the sophistication of the audience (voters).

Our model generates results on the conditions of possibility for different kinds of political discourses. A common thread in the logic underlying the equilibrium results is that audience sophistication fundamentally affects the speakers’ incentives to make informative arguments. It does so in a particular way: by increasing the informational content of speech for speakers who are less likely to be successful in carrying the majority of the audience. Put differently, larger shares of unsophisticated voters should correspond to weakly greater airing of minority arguments, i.e., arguments that are expected to be persuasive to less than half the population. Because voters may not, in equilibrium, hear the arguments that would convince the majority, more minority speech can change the collective outcomes — both by directly persuading a group voters, and thus effecting a change in their policy preferences in a way that changes the identity of the median voter, and by indirectly convincing a different group that they should prefer an opposite policy position, again, potentially affecting the identity of the median voter.
The figure below provides a graphic summary of equilibrium behavior and the corresponding conditions.

As the Figure makes clear, for sufficiently low values of average listener sophistication (that is, values to the left of the curved lines $1/2q$ above $E[\theta] = 1/2$ and $1 - 1/2q$ below $E[\theta]$) speakers’ speech is weakly more informative than for values of average listener sophistication that are to the right of that threshold. Sustaining a fully informative discourse requires that average listener sophistication be to the left of that threshold.

A striking implication of our results is that, although unsophisticated voters are not able to observe directly the content of unpersuasive speech and draw the implications of not being persuaded by it for their own preferred policy positions, those voters may end up with more informed policy positions than the more sophisticated voters. To see why, consider two polities characterized by different average levels of sophistication $q'$ and $q''$, but with the same $p(\cdot)$ and $\varphi$, such that $m_1 \geq m$ for $q''$. Let $E[\theta] < 1/2$ and suppose $q'$ such that 1-types do not speak in equilibrium and $q''$ such that they do. Suppose that both speakers are 1-type; clearly the $q''$-polity is better informed in equilibrium, since in the $q'$-polity there is no speech and no learning occurs. Suppose instead that the speakers are opposite types. Then in the $q''$-polity, all voters learn their true ideal points, but in the $q'$-polity, $(1 - q)E[\theta]$ of the voters remain uncertain of their true types after the discourse. Only in the event that both speakers are 0-type, does the $q''$-polity have more informed voters, and in that case, only because of the direct effect of having a larger proportion of unpersuaded voters who can infer their types.
This conclusion and the broader thrust of our results suggests an explanation for an important puzzle in the voting behavior in democratic societies: the disjunction between the individual-level political unsophistication of the voters and the relative sophistication and coherence of the electoral incentives created by voters in the aggregate. To paraphrase Lupia and McCubbins, the strategic incentives in the interaction between advocates and audiences mitigate the burdens of lower sophistication, enabling the voters to learn what they need to know.

Appendix

A.1 Proof of the Lemma

There are two types and two actions; thus, there are four possible pure strategies: (x, x), (x, 1), (0, x), and (0, 1). We consider the 0-type’s best responses first.

(1) to (x, x). If \( E[\theta] \leq 1/2 \), then speech 0 will persuade more than half the voters to adopt policy 0, the 0-type’s ideal point. If \( qE[\theta] \geq 1/2 \), then in response to speech 0, more than half the voters will observe that they are not persuaded by 0 and will adopt policy position 1, the 0-type’s least preferred outcome. Thus, the 0-type prefers x. If \( 1/2 \leq E[\theta] \leq 1/2q \), then the post-debate median after speech 0 is a voter who did not obtain any information from speech 0. However, because the proportion of voters who are persuaded to adopt 0 is not the same as the proportion who subsequently adopt 0, \( m_0 \neq m \). If \( m_0 < m \), then the 0-type strictly prefers 0; if \( m_0 > m \), the 0-type strictly prefers x.

(2) to (x, 1). If her opponent were 0-type, the incentives are as in (1). If her opponent were 1-type, then her own actions would be irrelevant to the outcome. If her opponent were 1-type, then her incentives are as in (1). Thus, her best response are identical to those identified in (1).

(3) to (0, x). If her opponent were 0-type, then her own actions would be irrelevant to the outcome. If her opponent were 1-type, then her incentives are as in (1). Thus, her best response are identical to those identified in (1).

(4) to (0, 1). Her actions would be outcome-irrelevant except if her opponent were a 1-type and \( 1/2 > E[\theta] > 1 - 1/2q \), in which case she strictly prefers 0 (as in (1)).

We next consider the 1-type’s best responses.

(1a) to (x, x). If \( E[\theta] \geq 1/2 \), then speech 1 will persuade more than half the voters to adopt policy 1, the 1-type’s ideal point. If \( qE[1 - \theta] \geq 1/2 \), then in response to speech 1, more than half the voters will observe that they are not persuaded by 1 and will adopt policy position 0, the 1-type’s least preferred outcome. Thus, the 1-type prefers x. If \( 1/2 > E[\theta] > 1 - 1/2q \), then the post-debate median after speech 1 is a voter who did not obtain any information from speech 1. However, because the proportion of voters who are persuaded to adopt 1 is not the same as the proportion who subsequently adopt 0, \( m_1 \neq m \). If \( m_1 < m \), then the 1-type strictly prefers 1; if \( m_1 > m \), the 1-type strictly prefers x.
(2a) to (x, 1). If her opponent were 0-type, the incentives are as in (1a). If her opponent were 1-type, then her action would be irrelevant. Thus, her best responses are identical to those identified in (1a).

(3a) to (0, x). If her opponent were 1-type, then her incentives are as in (1a). If her opponent were 0-type, then her own actions would be irrelevant to the outcome except if \( \frac{1}{2}q > E[\theta] > \frac{1}{2} \), in which case incentives are as in (1a). Thus, her best responses are identical to those in (1a).

(4a) to (0, 1). Her actions would be outcome-irrelevant except if her opponent were a 0-type and \( \frac{1}{2}q > E[\theta] > \frac{1}{2} \), in which case she strictly prefers 1 (as in (1a)).

Examining these best responses, it is clear that speakers have the weakly dominant strategies identified in the statement of the lemma.

Q.E.D.

A.2 Proof of Proposition 1 (uninformative discourse)

Suppose i’s opponent’s strategy is (x, x). If \( E[\theta] \geq \frac{1}{2} \), then the 1-type of i strictly prefers to speak, since she expects to persuade at least half the voters to choose policy 1. If \( E[\theta] \leq \frac{1}{2} \), then the 0-type of i strictly prefers to speak, since she expects to persuade at least half the voters to choose policy 0. Thus, at least one type of i must speak in response to (x, x).

Q.E.D.

A.3 Proof of Proposition 2 (universal discourse)

From the Lemma, if \( E[\theta] \geq \frac{1}{2} \), then the 1-type has a dominant strategy to speak, and the 0-type has a dominant strategy to speak if and only if also \( E[\theta] < \frac{1}{2}q \) and \( m_0 < m \). Also from the Lemma, if \( E[\theta] \leq \frac{1}{2} \), the 0-type has a dominant strategy to speak, and the 1-type a dominant strategy to speak if and only if also \( E[\theta] > 1 - \frac{1}{2}q \) and \( m_1 > m \).

In the former case, if at least one speaker is 1-type, then the voters hear speech 1, and, given \( E[\theta] \geq \frac{1}{2} \), at least half of them adopt policy 1 as their most preferred policy, as a result. If both speakers are 0-type, the voters hear only speech 0. If \( E[\theta] > \frac{1}{2} \), less than half adopt policy 0. If \( qE[\theta] < \frac{1}{2} \), less than half adopt policy 1.

Thus, the post-deliberative median voter is uninformed and given \( m_0 < m \), to the left of the ex ante median voter.

In the latter case, if at least one speaker is 0-type, then the voters hear speech 0, and, given \( E[\theta] \leq \frac{1}{2} \), at least half of them adopt policy 0 as their most preferred policy, as a result. If both speakers are 1-type, the voters hear only speech 1. If \( E[\theta] < \frac{1}{2} \), less than half adopt policy 1. If \( q(1 - E[\theta]) \) < \( \frac{1}{2} \), less than half adopt policy 0. Thus, the post-deliberative median voter is uninformed and given \( m_1 > m \), to the right of the ex ante median voter.

Q.E.D.

A.4 Proof of Proposition 3 (one-sided discourse)

(1) From the Lemma, if \( E[\theta] \leq \frac{1}{2} \), then the 0-type has a unique dominant strategy to speak, and the 1-type has a dominant strategy to be silent if and only if \( E[\theta] \leq 1 - \frac{1}{2}q \) or \( 1 - \frac{1}{2}q < E[\theta] < \frac{1}{2} \) and \( m_1 < m \). If at least one speaker is 0-type,
then in equilibrium, the voters hear speech 0, and given $E[\theta] \leq 1/2$, more than half of them adopt 0 as their most preferred policy, as a result. If both speakers are 1-type, then in equilibrium, no informative speech occurs and the voters learn nothing. The policy result is the ex ante median ideal point $m$.

(2) From the Lemma, if $E[\theta] \geq 1/2$, then the 1-type has a unique dominant strategy to speak, and the 0-type has a dominant strategy to be silent if and only if $E[\theta] \geq 1/2q$ or $1 − 1/2q < E[\theta] < 1/2$ and $m_1 < m$. If at least one speaker is 1-type, then in equilibrium the voters hear speech 1, and, given $E[\theta] \geq 1/2$, more than half of them adopt 1 as their most preferred policy as a result. If both speakers are 0-type, then in equilibrium no informative speech occurs, and the voters learn nothing. The policy result, then, is the ex ante median point $m$.

Q.E.D.

References


Catherine Hafer
Department of Politics
New York University
19 West 4th Street
New York, NY 10012
U.S.A.
catherine.hafer@nyu.edu

Dimitri Landa
Department of Politics
New York University
19 West 4th Street
New York, NY 10012
U.S.A.
dimitri.landa@nyu.edu