Ideological Argumentation in Elections

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Abstract

Political parties' rhetorical strategies play a crucial role in shaping public opinion and ultimately winning elections. In this perspective, what kind of rhetorical arguments to present to the public is a strategic choice of critical importance. In this paper, we present a model of rhetorical argumentation where parties compete to persuade a representative voter before engaging in platform competition. We characterize conditions under which both parties engage in ideological argumentation on the same issues and those under which they engage on different dimensions. Further, we discover instances where parties tacitly collude, neither truly attempting to change voter's preferences on that dimension. Finally, our model enables us to investigate when parties utilize positive arguments to emphasize the strengths of their preferred policies, versus when they opt to convince voters of the weaknesses of their opponent's or when they induce them to focus on other issues.

Introduction

Political parties are 'opinion-forming agencies of great importance' (Campbell et al. 1960, p. 128). They continually disseminate rhetorical messages to voters through tweets, social media posts, televised congressional debates, and interviews. These rhetorical strategies play a crucial role in shaping public opinion and ultimately in winning elections (Druckman, Fein and Leeper, 2012). Indeed, scholars often highlight that a major challenge for parties lies in fostering positive attitudes among the broader public towards their preferred policy alternatives (Nelson, 2004).

Deciding what kind of rhetorical arguments to present to the public thus becomes a strategic imperative. A widely shared perspective is that, in order to successfully sway public opinion, parties need to "identify—and then emphasize—those considerations that work to their advantage." (Jerit, 2008 p. 2). Parties must carefully choose which issues to prioritize when persuading voters, the nature of arguments to articulate, and whether to attempt to influence the salience voters attribute to various issues, or instead, their ideological preferences.

The political science literature has paid little attention to providing a theoretical framework for understanding these important strategic choices. Here, we aim to address this gap. We introduce a game-theoretic model of rhetorical argumentation within a spatial electoral framework, where parties compete to persuade voters and shape the political environment in which they operate before setting their policy platforms. We analyze various iterations of the model to better understand the incentives that shape political parties' rhetorical strategies in different contexts. While existing works in this tradition usually focus on how parties design platforms to cater to voters' exogenous preferences, our contribution complements this literature by exploring how parties may influence voters' preferences *before* engaging in platform competition.

Rhetoric and Persuasion: Our Approach

We consider two parties competing in a multidimensional issue space for the support of a voter. The model has two stages: a persuasion stage, in which the parties present rhetorical arguments, and an electoral stage, in which they set platforms. The players face common uncertainty about which policy dimensions are relevant for the voter and the location of her optimal platform on these dimensions. For example, consider a middle-class voter contemplating whether to support a re-distributive policy. While this voter may not directly benefit from such a program, indirect advantages may arise if redistribution stimulates consumer spending and economic growth. Conversely, potential indirect harm may occur if increased taxation dampens investments and adversely affects the economy. Alternatively, both of these effects may be implausible, or the consequence of this policy on voter's welfare may be minimal, and this policy dimension may be best seen as irrelevant for the voter. Thus, on each dimension the voter can be one of three types: left-wing, right-wing, or unconcerned (for whom this dimension is welfare-irrelevant).[1]

While the voter's unknown type describes her *innate* preferences, parties' rhetorical arguments may influence her beliefs about her type and thus her *induced* preferences over policies.[2] On each policy dimension, parties have the option to present *supporting* arguments that aim to convince the voter that a policy program aligned with their own ideology is the best choice for her, *refuting* arguments that aim to discredit the policies aligned with the opponent, or *vacuous* arguments that do not meaningfully engage with the issue at hand. (In an extension, we also allow the parties to present *salience* arguments that have no ideological connotation, but aim to convince the voter that a specific policy dimension is (or is not) relevant for her welfare.)

As an example of politicians using refuting arguments, consider a recent speech by Elizabeth Warren on the issue of redistribution.[3] Warren's rhetoric focused on a critique of trickle-down economics: 'When all the varnish is removed, trickle-down just means helping the biggest corporations and the richest people in this country, and claiming that those big corporations and rich

[1] Our approach does not assume that all voters must face this type of uncertainty nor that uncertainty must permeate all policy issues. However, in order for persuasion to be possible, at least *some* voters must be unsure of what the optimal policy is on at least *some* issues. It is these voters and these issues that we focus on in this paper.

[2] Following the presentation of the setup, we will comment on a broader interpretation of our model in which special interest groups, rather than the parties themselves, shape public opinion through rhetorical argumentation. For studies emphasizing the role of special interest groups in this process, see Truman (1951); Dür and Mateo (2014); Dür (2019).

[3] https://www.warren.senate.gov/newsroom/press-releases/senator-warren-and-039s-remarks-at-afl-cio-national-summit-on-raising-wages

people could be counted to create an economy that would work for everyone else.' However, she argued, these claims 'never really made much sense ... The top 10% got all the growth in income over the past 30 years–all of it–and the economy stopped working for everyone else.' This example illustrates the essence of refuting arguments in our model: Warren's rhetorical approach aimed to expose weaknesses and pitfalls in the arguments commonly adopted to support conservative economic policies, rather than offering reasons to persuade voters of the merits of her own preferred redistributive platforms.

Contrast this with a recent statement by former President Barack Obama,[4] exemplifying the use of supporting arguments. "You don't have to take a vow of poverty just to say, 'Well, let me help out... let me look at that child out there who doesn't have enough to eat or needs some school fees, let me help him out. I'll pay a little more in taxes... When economic power is concentrated in the hands of the few, history also shows that political power is sure to follow — and that dynamic eats away at democracy." In this case, rather than criticizing trickle-down economic theories, Obama presents an argument directly *in support* of redistribution, by emphasizing moral aspects of the issue as well as the importance of reducing inequalities for growth and democratic stability.

Regardless of the types of arguments articulated by the parties, both theoretical intuition and existing empirical findings underscore that voters are not merely passive recipients of political parties' persuasive efforts (Chong and Druckman, 2007). Instead, they engage in a process of 'deliberate integration,' evaluating the relevance and significance of each idea presented by the parties, and subsequently forming their own opinions on policy matters (Nelson, Clawson and Oxley 1997, p. 578).

Our model of argumentation aims to capture these features. As such, we depart from the asymmetric-information framework typically used in the formal literature to examine verbal persuasion. That approach emphasizes the speaker's credibility: the speaker possesses information that is unknown to the receiver, and persuasion is successful when the receiver is convinced, to some extent, that the speaker is telling the truth.[5] This asymmetric information framework, then,

[4] https://www.cnbc.com/2018/07/18/barack-obama-on-wealth-inequality-only-so-much-you-can-eat.html

[5] A related approach based on private information with verifiable disclosure assumes that arguments are always

‘cannot make sense of the internal persuasive force’ of an argument (Minozzi and Siegel 2010 , p. 7).

In contrast, we think about a setting where politicians do not have private information about which policy is best for the voter. Their arguments aim to invoke knowledge that the voter already possesses or make it, or its implications for the matter at hand, self-evident through deductive or inductive reasoning (Hafer and Landa, 2007 p. 331). Arguments that convince do so because they ‘make sense’ for the voter; arguments that fail to convince inadvertently expose weaknesses in the party’s case (Wood and Porter 2019 p. 141).

Formally, the voter’s type dictates both which arguments resonate with her *and* where her optimal policy aligns on each dimension. The types of voters who are more easily swayed by left-wing (right-wing) arguments are also the ones who tend to benefit from left-wing (right-wing) policies. Following Bayesian updating, then, when an argument resonates it moves the voter’s beliefs (and preferences) in the speaker’s optimal direction; when it doesn’t, it moves the voter in the opposite direction. The possibility of arguments not only failing to persuade, but ultimately leading the receiver to update *against* the speaker, is in line with the “backfiring effect” documented in the empirical literature (see, e.g., Bail et al. 2018. Slothuus and De Vreese 2010).

In this framework, a crucial difference between refuting and supporting arguments is their effect on different types of voters. In particular, refuting arguments allow the speaker to capture the unconcerned voter type (i.e., the type for whom the issue at hand is welfare-irrelevant), who would find a supporting argument by the same party on the same issue unpersuasive. To sharpen the contrast, consider a voter who, when presented with two arguments—one supporting a left-wing policy and the other supporting a right-wing one— would find both unpersuasive (in the language of the model, this voter is an unconcerned type). Suppose this voter receives only a *refuting* argument from the left-wing party, highlighting the shortcomings of the right-wing policy. In this scenario, the voter finds this argument convincing, for the same reason that she would find an argument

persuasive when they are presented. The most closely related paper in this tradition is Dziuda’s model of argumentation (2011), where an expert receives a series of arguments in favor or against a proposition, and can verifiably disclose as many as she wants but can’t credibly reveal the number of arguments she herself observed.

supporting the right-wing policy unpersuasive. Thus, her induced preferences shift to the left. This holds true even though, if this voter were to receive only a *supporting* argument from the left-wing party, she would, by assumption, find it unpersuasive and react by shifting her preferences to the right, away from the party. In other words, refuting arguments are more effective on the extensive margin, enabling the speaker to exploit the residual uncertainty the voter faces when exposed to only one side of the story.

Preview of Results

Our analysis uncovers rich results. We find that, on issues where there is a low probability of the voter being an unconcerned type, parties may tacitly collude, both presenting vacuous arguments without attempting to sway the voter's opinion. This is because a party's attempts to persuade the voter may backfire if its arguments do not resonate. Everything else being equal, this risk is higher for issues that are ex-ante more prominent for the voter. It's important to note that this does not mean parties will avoid discussing these issues, nor that they will put less emphasis on these dimensions in their rhetorical strategies. Instead, the emergence of these vacuous arguments in our setting aligns with the observation that politicians often talk 'without saying anything at all',[6] speak in 'ringing generalities',[7] evade questions, and answer without actually answering.[8] In Italy, there's a term for this phenomenon: *politichese*, which describes a rhetorical style aimed precisely at not informing or explaining anything. Our model rationalizes this kind of behavior within a framework where politicians strategically choose when to talk by 'saying nothing', and when to present logical arguments in an attempt to change voters' views.

Indeed, on dimensions that are ex-ante less important to the voter, the parties will present non-vacuous arguments aimed at persuading the voter. On these issues, parties tend to prioritize refuting arguments, which critique policy stances opposing the speaker's preferences, over supporting arguments, which directly advocate for the speaker's ideal choices. When the parties' platforms fully

[6]https://www.mic.com/articles/13722/the-politics-of-fluff-how-politicians-say-everything-without-saying-anything-at-allgoog$_{r}$*ewarded*

[7]https://slate.com/news-and-politics/2007/06/why-do-politicians-talk-like-that.html

[8]https://www.livescience.com/14074-politicians-question-dodging-debates.html

converge, as they do in equilibrium in our baseline model, the intensity of the voter's preferences on each dimension is inconsequential. Thus, in the argumentation stage the parties are incentivized to focus exclusively on maximizing the chances of changing the voter's directional preferences (i.e., the extensive margin of persuasion). They do so by adopting refuting arguments, which allow the speaker to capture the unconcerned voter type and are thus more likely to resonate.

However, supporting arguments can emerge in equilibrium when political parties have incentives to increase the electoral salience of specific policy issues in the voter's mind (i.e., focus on the intensive margin of persuasion). In an extension, we show that such incentives arise when substantial frictions surface in the electoral process, e.g., non-ideological valence considerations becoming relevant for the voter's electoral choice. In this scenario, political parties face a trade-off: precisely because refuting arguments are more effective at exploiting ambiguity (and therefore better on the extensive margin), supporting ones are better on the intensive margin. Under some conditions, parties optimize this trade-off by adopting supporting arguments.

In the baseline model, parties face no resource constraint and are free to attempt persuasion on all issue dimensions. In equilibrium there is always competition in persuasion. However, we show in an extension that, when the parties must select a subset of issues to prioritize, one-sided persuasion can emerge. In this case, the parties will sometimes choose to talk past each other and attempt to persuade the voter on different policy dimensions.

Finally, in a last extension, we allow parties to present salience arguments–devoid of ideological connotation–that have the objective of convincing the voter that a specific dimension is, or is not, relevant for her. We find that such arguments can emerge when one of the parties has a large initial disadvantage (i.e., the voter's initial beliefs heavily favor the other party's ideology). Because the disadvantaged party has little hope of changing the voter's preference in its favor, the party instead tries to reduce the electoral salience of the issue by persuading the voter that changing policy on that dimension will have little impact on her welfare.

Related Literature

As detailed above, our approach departs from (much of) the existing formal treatments of persuasion, that rely on the assumption of asymmetric information between speakers and receivers and equate persuasiveness with credibility. Building on Hafer and Landa (2007), we model a setting where speakers do not possess private information about the receivers' optimal policy, and arguments are persuasive when they resonate with the audience (formally, they match the audience's type). However, the focus of the present paper is distinct. Hafer and Landa (2007) study a group deliberation setting and focus on characterizing each member's choice of how much time to devote to presenting arguments versus listening to those advanced by others, without distinguishing between different types of arguments actors can present. In contrast, we embed the argumentation framework in an electoral competition model, and study parties' strategic choice of which issues to engage on and whether to present arguments that emphasize the strengths of their preferred policies or ones focused on the weaknesses of their opponents' stances.

Our approach also connects to the literature on Bayesian persuasion (Kamenica and Gentzkow, 2011), as presenting arguments in this framework is analogous to running experiments. For clarity of exposition, we defer discussion of the differences between these approaches until after the presentation of the model.

Additionally, our work is in conversation with a recent literature in behavioral political economy that studies the role of narratives in political persuasion (e.g.,Eliaz and Spiegler 2020, Benabou and Tirole 2006, Levy, Razin and Young 2022). In Izzo, Martin and Callander (2023), which is most closely related to our paper, parties present alternative models of the world that encompass all issue dimensions. Voters evaluate each model, or narrative, as a whole. They choose the model that best explains their experiences, and adopt the beliefs induced by this model on *all* issues. In contrast, in our framework voters evaluate each argument and issue *separately*, assessing arguments based on their logical merit. As we elaborate further below, this separability is an important difference that allows us to capture parties' incentives when they compete to shape public opinion before deciding how to align their policy positions across the various issues.[9] Furthermore, existing works in this tradition assume behavioral receivers that are in some way constrained in their ability to process information. In contrast, in our model we maintain the assumption of Bayesian updating.

Finally, this paper differs from but complements an important body of work, both theoretical and empirical, about electoral campaigns. Aragonès, Castanheira and Giani (2015) and Dragu and Fan (2016), among others, formally analyze parties' choice of campaign messages aimed at manipulating voters' policy attitudes.[10] On the empirical side, several authors study parties' choice of positive versus negative campaign strategies (e.g., Nai and Walter 2015; Geer 2006; Brooks and Geer 2007; Carraro and Castelli 2010; Lipsitz and Geer 2017).[11] Another strand of research empirically investigates whether and when campaigns feature parties talking past each other versus when they engage on the same issues (see, e.g., Ansolabohare and Iyangar 1994), Petrocik (1996), Sellers (1998), Sides (2006), Sigelman et al. (2004), Kaplan, Park, and Ridout (2006)).

All these existing works study parties' strategic behavior in the last few months, or even weeks, before the elections, *after* electoral platforms are set. Our work shares obvious similarities, but focuses on parties' use of rhetorical strategies to shape voter preferences *before* the platform competition stage, precisely with the aim of manipulating the electoral environment in which they choose their policy platforms. Our paper provides insight into the distinct strategic incentives parties face during this process. We will return to this point after the presentation of our the model.

We conclude by noting two important distinctive aspects of our modelling technology. First, we allow parties to influence voter's *directional* preferences on different issues. Second, we consider a microfounded model of argumentation and persuasion that delves into the mechanisms of *how* parties can shape voters' preferences. This contrasts with most of the existing formal literature on campaigns, including the works mentioned above, which suppose that parties can only influence the

[9]This concern does not emerge in Izzo, Martin and Callander (2023), since they consider a multidimensional world but a unidimensional policy space.

[10]Less related to our work, other formal papers analyze candidates choice of campaign messages when they are privately informed about their (and/or their opponent's) quality (e.g., Polborn and Yi (2006).

[11]Our model of refuting arguments is closer to the kind of negative campaigning that entails criticisms of the opponent's positions rather than "dirty tricks" or personalistic attacks, with the former being generally perceived as having higher informational value for the voters (Geer 2006; Carraro and Castelli 2010; Lipsitz and Geer 2017).

various' issues relative electoral salience and/or model this effect in a reduced form.[12]

The Baseline Model

Players and actions. We consider the strategic interaction between two policy-motivated parties–L and R–and a voter V. The parties compete in an N-dimensional policy space $\mathbb{R}^N$. Players face common uncertainty over which dimensions of the policy space are relevant to the voter and what her optimal policy is for each relevant dimension. On each dimension, the parties choose whether to present ideological arguments to try to persuade the voter and, if so, of what kind. Following the arguments, the voter updates her beliefs about her optimal policy. Once the voter's updated preferences become public, the parties commit to a policy platform. The voter then decides which party to elect, and the elected party implements the announced platform.

Information and payoffs. On each dimension $j \in N$ the voter could be a left-wing type, $\theta_j = -1$, a right-wing type, $\theta_j = 1$, or unconcerned $\theta_j = \emptyset$, with θ_j drawn i.i.d. on each dimension. An unconcerned type is one for whom the dimension has no impact on her welfare (an alternative interpretation is that all policies are equally good or equally bad for the voter). Formally, the voter's utility is given by

$$U_v = -\sum_j \mathbf{I}_j \left(\theta_j - x_j\right)^2, \tag{1}$$

where $\mathbf{I}_j = 0$ if $\theta_j = \emptyset$ and $\mathbf{I}_j = 1$ otherwise. x_j is the implemented policy on dimension j. Note that, if dimension j is relevant for the voter (that is, $\theta_j \neq \emptyset$), her ideal policy takes value 1 or -1.

At the beginning of the game, the voter's true type is unknown to all players, including the voter herself. That is, neither the parties nor the voter can perfectly anticipate the consequences of each policy choice for the voter's welfare, or how she would feel upon experiencing different policies

[12] Roemer (1994) allows parties to shape voters' directional preferences but also does so in a reduced-form, assuming that when voters are exposed to a party's messages their preferences become more aligned with the party's. Skaperdas and Grofman (1995) consider a setup where positive campaign messages are assumed to mobilize party's supporters while negative messages demobilize the opponent's.

being implemented. All players share common prior beliefs that

- $p(\theta_j = -1) = \pi_j \lambda_j$,
- $p(\theta_j = 1) = \pi_j(1 - \lambda_j)$, and
- $p(\theta_j = 0) = 1 - \pi_j$.

Here π_j captures the players' expectations about the true salience of dimension j for voter welfare, hereafter referred to as welfare salience.[13] λ_j is the probability that, if dimension j is welfare-salient for the voter, her ideal policy on this dimension has value -1. Notice that parties have no private information about the voter's type. As highlighted in the introduction, we make this assumption to study persuasiveness as a function of the quality and content of the arguments, rather than as a function of the speaker's trustworthiness (as in the classic asymmetric information setting).

Finally, for party $i \in \{L, R\}$, utility is given by

$$U_i = -\sum_j (\tilde{x}_j^i - x_j)^2, \tag{2}$$

where $\tilde{x}_j^i$ is party j's optimal policy on dimension j. For simplicity, we assume that $\tilde{x}_j^R = -\tilde{x}_j^L = 1$ for all dimensions $j \in N$. In the Online Appendix, we relax this assumption and show that the results from the baseline setup continue to hold as long as parties' ideal points are not too polarized (see Proposition 2A). Furthermore, our results would remain unchanged if we assumed that parties also obtain a benefit from winning elections per se (i.e., care about both policy and office).

Argumentation. On each dimension $j \in N$, parties simultaneously choose what kind of argument to present.[14] In particular, each party i can present a **supporting** argument ($a_j^i = s$) that aims to convince the voter that a policy program aligned with the party's own preferences is the best

[13] We use this wording to distinguish our notion of salience from other common uses of this term in the literature, where it connotes how frequently a certain issue is talked about, or how prominent an issue is in an election.

[14] Our results would be unchanged if instead parties present arguments sequentially. We briefly return to this point at the end of this section.

choice for her, a **refuting** argument ($a_j^i = r$) that aims to discredit policies aligned with the opponent's preferences, or a **vacuous** argument ($a_j^i = v$) that lacks any real persuasive content. In our framework, presenting a vacuous argument is the same as ignoring dimension j in the rhetorical discussion. In other words, a vacuous argument has no impact on the voter's beliefs.[15] In contrast, non-vacuous arguments may successfully persuade the voter, or may backfire.

More specifically, non-vacuous arguments *resonate* with the voter if and only if their claim matches her underlying type θ_j.[16] Then, an argument supporting a left-wing (right-wing) policy resonates with the voter *if and only if* she is a left-wing (right-wing) type. In contrast, an argument refuting the left-wing (right-wing) policy resonates *unless* the voter is a left-wing (right-wing) type. In one interpretation of our model, the voter is an objective interpreter of the force of the arguments. That is, an argument resonates if and only if the voter finds its claims regarding the effect of the policy for her welfare to be true. Under an alternative interpretation, which also fits our formal framework, whether the arguments reflect the true state of the world is less relevant than whether the receiver is the sort that is more or less readily swayed by the left- vs right- wing argument.

Let $\rho_{a_j^i} = 1$ denote the event that argument a_j^i resonates with the voter, and $\rho_{a_j^i} = 0$ denote the event that it does not. The following table summarizes our assumptions on when arguments resonate, conditional on the receiver type (we omit the subscript a_j^i for readability):

[15] Outside the model, while a vacuous argument has no effect on voters' induced directional preferences, mentioning an issue may nonetheless increase its electoral salience. Although we abstract away from this possibility, incorporating this effect of arguments in our setup would have no impact on our baseline findings.

[16] For the purposes of definition, we prefer to use the term "resonate" because its natural language meaning is less ambiguous than that of "persuade". This is because an argument that doesn't match the receiver's type can still be persuasive in that it convinces the receiver to go against the policy corresponding to the sender's argument. Henceforth, when we use the term "persuasive" in this context, we specifically refer to the argument resonating as defined in the text.

	$\theta_j = 1$	$\theta_j = -1$	$\theta_j = \emptyset$
$a_j^R = s$	$\rho = 1$	$\rho = 0$	$\rho = 0$
$a_j^R = r$	$\rho = 1$	$\rho = 0$	$\rho = 1$
$a_j^L = s$	$\rho = 0$	$\rho = 1$	$\rho = 0$
$a_j^L = r$	$\rho = 0$	$\rho = 1$	$\rho = 1$

Table 1: Argument resonance conditional on voter type and argument. a_j^R (a_j^L) denotes an argument presented by R (L).

Underlying these assumptions is the notion that each policy is associated with a set of reasons that most effectively showcase its merits. A supporting argument for a given policy highlights these reasons, while a refuting argument provides the voter with a rationale to discredit them. A refuting argument may then highlight logical, factual, or normative flaws in what would be the best supporting argument the opponent might use. Then, in this framework, an argument supporting a policy and one refuting the same policy partition the voter-type space in the same way: if one argument resonates with the voter, the other cannot, and vice versa. In contrast, the argument supporting the right-wing policy and the one supporting the left-wing alternative emphasize distinct sets of attributes or reasons, and therefore partition the type-space in different ways. It is possible that the voter would find both arguments unpersuasive (because she is an unconcerned type).

Timing. To sum up, the timing of the game is as follows:

1. Parties simultaneously present N-dimensional argument vectors $\mathbf{a}^L$ and $\mathbf{a}^R$;
2. On each dimension $j \in N$, V observes arguments and whether they resonate, updates beliefs on θ_j using Bayes rule;
3. Parties observe whether arguments resonated, and simultaneously commit to $\mathbf{x}^L \in \mathbf{R}^N$ and $\mathbf{x}^R \in \mathbf{R}^N$;
4. Voter chooses whom to elect;

5. Elected party implements announced platform.

Equilibrium concept and refinement. We consider Perfect Bayesian Equilibria in pure strategies. When multiple equilibria exist, we eliminate ones that are Pareto-dominated for the parties (if any). We note that the set of equilibria surviving this refinement exactly coincides with the equilibria of the game if parties were to present arguments sequentially rather than simultaneously. This holds true regardless of what party would move first in the sequential game.

Discussion of the Model

In this section, we provide several comments on our model setup. First, while the model described above treats unitary political parties as the players of the argumentation stage, our framework could be applied more broadly. Since the various issue dimensions are separable in our setup (i.e., the voter evaluates arguments on each issue separately),[17] the model can accommodate parties as coalitions of different factions or groups, with aligned preferences but each caring predominantly about one policy dimension. We can then envision argumentation on the various issues being conducted by different factions within the party, or even by ideologically aligned interest groups.

Second, our focus on argumentation shaping public opinion *before* electoral competition details incentives that differ significantly from those faced by parties during electoral campaigns. Two key factors producing these differences are that, in our framework, parties (1) observe the outcome of the argumentation stage before selecting their electoral policy positions and (2) need not (yet) be making across-issues "aggregate" arguments in their favor. The former allows parties to experiment with rhetorical arguments they might be unwilling to pursue during electoral campaigns, since the subsequent choice of policy platform allows them to mitigate the downside risk of attempting to sway the voters. The latter allows parties to focus argumentation on individual issues separately. This captures the flexibility parties may have early in the electoral cycle when they are not yet required to present bundled positions across issues to attract voters.

[17] And, importantly, in equilibrium the dimensions are always treated as separate in the platform game, as we will show in Lemma 1.

Third, we introduce an analogy to illustrate the mechanics of our argumentation technology and clarifying the connections of the paper to the formal literature on persuasion. Imagine a scenario where the voter has three cups in front of her, labelled as her three possible types, with a ball hidden under one of these cup, indicating her true type. Neither the voter nor the parties know where the ball is. We can think of a party's argument as flipping one of these cups. In particular, a supporting argument flips the cup corresponding to the speaker's preferred position, with the hope of revealing to the voter that the ball is hiding under that exact cup; a refuting argument flips the cup corresponding to the policy of the opponent, in hopes of revealing that the cup is empty.[18]

Presenting an argument is then technically equivalent to conducting an experiment that reveals whether the voter's type aligns with the argument. From this perspective, our approach shares similarities with the Bayesian persuasion framework (Kamenica and Gentzkow, 2011), as previously noted. However, significant differences exist between the two approaches.

In particular, our model imposes the requirement that resonance events (i.e., realizations of ρ as defined on p. 11) must be truthful: an argument can never resonate with the voter (i.e., $\rho = 1$) if it does not match her type. In other words, the speaker can only conduct experiments that yield truthful outcomes.[19] In contrast, in the Bayesian persuasion framework the persuader can design *any* experiment. In the language of our model, this allows for the possibility of an argument supporting a right-wing policy resonating with a $\theta = -1$ voter type.[20]

The truthfulness restriction we impose captures the idea that arguments provide the receiver with logical ammunition that she employs to form her own opinions and beliefs on the subject. Hence, when arguments are viewed as experiments, their outcomes must be correctly understood by the receiver, since they are determined by the receiver's own deliberation and reasoning. To put it simply, the receiver cannot be tricked into thinking that a certain argument does or does not

[18]In the baseline model, each party is restricted to flipping only one cup on each dimension, representing either the -1 type or the $+1$ type. Parties cannot flip multiple cups, and they cannot flip the cup corresponding to the unconcerned voter type. We consider this richer argument space in an extended version of the model analyzed below.

[19]We emphasize that the truthfulness restrictions refers to resonance events, not the arguments being presented.

[20]The implication is that, whereas the Bayesian-persuasion framework allows the information designer to choose any partition of the state space, our framework allows the parties to choose only whether the experiment will group the unconcerned type with the right-wing type (by choosing an argument that reveals whether $\theta = -1$ or not) or with the left-wing type (by choosing an argument that reveals whether $\theta = +1$ or not).

make sense to her. As such, this restriction makes our framework particularly valuable for studying *verbal* persuasion that works by tapping into the audience's own existing knowledge, experiences, values, or systems of beliefs.

Preliminary Analysis

Arguments and Persuasion

Before delving into equilibrium analysis, we focus on characterizing how our (Bayesian) voter responds to ideological arguments. To fix ideas, suppose first that the voter is only interacting with one speaker - the right-wing party R. Denote x_j^v the voter's preferred policy conditional on her posterior beliefs (i.e., the policy the voter would choose to implement on dimension j). Then, we have:

	$\rho = 1$	$\rho = 0$
$a_j^R = s$	$x_j^v = 1$	$x_j^v = -1$
$a_j^R = r$	$x_j^v = 1$	$x_j^v = -1$
$a_j^R = v$	$x_j^v = 1 - 2\lambda_j$	$x_j^v = 1 - 2\lambda_j$

Table 2: Voter's induced policy preferences, single speaker case.

Vacuous arguments have no effect on the voter's beliefs and thus no effect on her policy preferences. In contrast, non-vacuous arguments can successfully sway the voter in the speaker's preferred direction, if they resonate, or can backfire and move the voter farther away, if they do not resonate. Because of our stark assumptions in Table 1, if an argument persuades (backfires) it then moves the voter all the way to the party's preferred (the opponent's preferred) policy.[21] These assumptions capture the premise that, when parties present non-vacuous arguments, the voter expects these arguments to be the most effective case each party might make to sway her in their preferred direc-

[21]This starkness is, of course, not necessary for the logic of our results.

tion. Thus, if a supporting (refuting) argument does not resonate, it cannot be (must be) that the corresponding policy is good for the voter. Vice versa when arguments resonate.

Table 2 might lead one to conclude that supporting and refuting arguments are strategically equivalent since they are equally effective when they resonate with the voter.[22] However, and crucially for our results, the two types of arguments differ in terms of their probability of resonating and, therefore, their effect on voter's *expected* induced preferences $E(x_j^v)$. Maintaining our single-speaker example, we have:

$a_j^R = s$	$E(x_j^v) = \pi_j(1-\lambda_j) - (1 - \pi_j(1-\lambda_j))$
$a_j^R = r$	$E(x_j^v) = (1 - \pi_j\lambda_j) - \pi_j\lambda_j$
$a_j^R = v$	$E(x_j^v) = 1 - 2\lambda_j$

Table 3: Voter's *expected* induced policy preferences, single speaker case.

A right-wing supporting argument will resonate with the voter if and only if dimension j is relevant for the voter *and* her optimal policy is a right-wing one. The probability of this event is $\pi_j(1-\lambda_j)$. In contrast, a refuting argument by the right-wing party will resonate with the voter *unless* left-wing policies are actually optimal for her, i.e., with probability $1 - \pi_j\lambda_j$. Thus, refuting arguments are more likely to resonate, and $(1 - \pi_j\lambda_j) - \pi_j\lambda_j > \pi_j(1-\lambda_j) - (1 - \pi_j(1-\lambda_j))$.

Notice that refuting arguments capitalize on the ambiguity the voter encounters when she only hears one side of the story. Say the voter finds an argument refuting the left-wing policy persuasive; in this case, left-wing policies cannot be optimal for her. However, she remains uncertain about how she would feel if confronted with an argument advocating for the merits of right-wing alternatives. It's plausible that such an argument would be persuasive, implying that right-wing policies are optimal for the voter. Yet, there's also the possibility that this argument would fail to resonate, suggesting that different policy alternatives on this dimension are inconsequential for the voter (i.e., she is the unconcerned type on this dimension). Because of this uncertainty regarding whether

[22]This is obviously a simplification. Following the presentation of our results we discuss their robustness if the voter is intrinsically more skeptical of refuting arguments.

right-wing policies are optimal or merely on par with other alternatives, the voter's best choice on this dimension is policy $+1$ (i.e., she behaves as if she knew her type to be $\theta_j = 1$).

In sum, it is easier for a party to dispute the merits of the opponent's policy than to persuade the voter that the party's own policy is beneficial. Refuting arguments then allow parties to sway the voter in their preferred direction without taking a stance on *why* their policies are optimal for her (thus reducing the risk of backfiring).

On the other hand, for the same reasons described above, refuting arguments are less effective than supporting ones in persuading the voter of the relevance of a particular dimension to her welfare (i.e., in moving the voter prior π_j). Because the unconcerned type finds refuting arguments persuasive, a refuting argument can never convince the voter that $\theta_j \neq \emptyset$. In contrast, when a supporting argument resonates, it *must* be the case that $\theta_j \neq \emptyset$, and the voter updates accordingly. In other words, refuting arguments are better on the extensive margin of persuasion, while supporting ones are better on the intensive margin. As we will see when comparing the results of our baseline model with the extension on electoral frictions, this difference is paramount in determining under which conditions one or the other type of arguments can be sustained.

Competing Rhetorical Messages

Next, we move back to our analysis of competition in persuasion. Suppose that both parties, L and R, are allowed to present arguments. Denote $x_j^v = \emptyset$ the event that the voter learns that dimension j is irrelevant for her (i.e., $\theta_j = \emptyset$). Then, we have:

	$a_j^L = s$	$a_j^L = r$	$a_j^L = v$
$a_j^R = s$	$E(x_j^v) = \begin{cases} \emptyset & \text{with probability } 1-\pi_j \\ 1-2\lambda_j & \text{with probability } \pi_j \end{cases}$	$E(x_j^v) = \pi_j(1-\lambda_j) - (1-\pi_j(1-\lambda_j))$	$E(x_j^v) = \pi_j(1-\lambda_j) - (1-\pi_j(1-\lambda_j))$
$a_j^R = r$	$E(x_j^v) = (1-\pi_j\lambda_j) - \pi_j\lambda_j$	$E(x_j^v) = \begin{cases} \emptyset & \text{with probability } 1-\pi_j \\ 1-2\lambda_j & \text{with probability } \pi_j \end{cases}$	$E(x_j^v) = (1-\pi_j\lambda_j) - \pi_j\lambda_j$
$a_j^R = v$	$E(x_j^v) = (1-\pi_j\lambda_j) - \pi_j\lambda_j$	$E(x_j^v) = \pi_j(1-\lambda_j) - (1-\pi_j(1-\lambda_j))$	$E(x_j^v) = 1-2\lambda_j$

Table 4: Voter's *expected* induced policy preferences, competition in persuasion.

If only one party presents a non-vacuous argument, then voter learning is as in the single-speaker case. Assume instead that both parties present supporting arguments. With a probability of $\pi_j\lambda_j$, the left-wing argument resonates with the voter and leads her to update that dimension j is relevant, and the optimal policy is negative. With a probability of $\pi_j(1-\lambda_j)$, the right-wing argument resonates with the voter, and she concludes that dimension j is relevant and policy 1 is the optimal choice for her. Finally, with a probability of $1-\pi_j$, neither argument resonates with the voter, and she updates that her type must be $\theta_j = \emptyset$, i.e., she becomes indifferent between policy alternatives on this dimension and will focus on other issues when making her electoral decisions. A similar logic applies if both present refuting arguments.

Equilibrium Analysis

Finally, we move to equilibrium analysis. As usual, we proceed by backwards induction beginning with the platform competition stage. Recall that, in our setting, parties observe whether arguments resonated or not with the voter *before* they commit to their platform. With a single voter and no noise, our platform stage reduces to a Downsian game despite the multiple policy dimensions. In equilibrium, the parties will converge on the voter's induced optimum (as characterized in Table 4) on each dimension the voter believes to be relevant with strictly positive probability. On any dimension that the voter considers irrelevant, electoral competition is not a constraint, and the parties simply commit to their ideal policy ($\tilde{x}_j^R$ and $\tilde{x}_j^L$). The parties always win with equal probability.

Formally, denote $\widehat{\pi}_j$ to be the voter's posterior probability that $\theta_j \neq \emptyset$, given the arguments received and their resonance. Recall that x_j^v denotes the optimal choice for the voter on dimension j, conditional on the outcome of parties' persuasion. Then, we have:[23]

Lemma 1. *In equilibrium the parties always win with equal probability. Further,*

- *if* $\widehat{\pi}_j = 0$, *then in equilibrium* $x_j^R = \tilde{x}_j^R$ *and* $x_j^L = \tilde{x}_j^L$*;*
- *if* $\widehat{\pi}_j > 0$, *then in equilibrium* $x_j^R = x_j^L = x_j^v$*.*

Notice that equilibrium platforms depend on whether the voter assigns positive probability to the welfare salience of the issue, but do not otherwise depend on the magnitude of the voter's posterior beliefs. In other words, the voters' beliefs over the different dimensions' *relative* welfare salience is inconsequential because parties fully converge on all issues j where $\widehat{\pi}_j > 0$.[24]

The Parties' Rhetorical Strategies

Moving backwards, we can now characterize the parties' rhetorical strategies in equilibrium. Lemma 1 implies that the platforms parties adopt in equilibrium on each dimension are not a function of the arguments presented on the other issues. Further, in equilibrium parties always win the election with equal probability. As a consequences, at the argumentation stage the parties treat each dimension separately, as if it was the only one available.

Proposition 1. *The exists a unique* $\bar{\pi}_j(\lambda_j)$ *s.t.*

- *On any dimension* $j \in N$ *for which* $\pi_j > \bar{\pi}_j(\lambda_j)$*, in equilibrium both parties present vacuous arguments;*

[23] To simplify the statement of Lemma 1, we set aside additional equilibria that may arise in the case in which the voter discovers her true type on all available dimension *and* she learns that her optimal policy is the same on all issues. In this limiting situation, there exist multiple equilibria in which the party whose preferences align with the voter's wins the election with probability one by proposing its own ideal policy (which coincides with the voter's) on each dimension. The opponent is indifferent between all platforms. Notice however that this equilibria are payoff-equivalent to the one characterized in Lemma 1, since parties do not care about platforms directly but only about the policy outcome.

[24] The full-convergence result arises because this baseline model assumes no friction in the electoral process (e.g., no noise, no valence consideration etc.). As we will show below, in a world with substantial electoral frictions, where party platforms diverge, the salience of each issue influences equilibrium outcomes. By comparing the two versions of the model, we can fully elucidate the incentives guiding parties' strategic decisions.

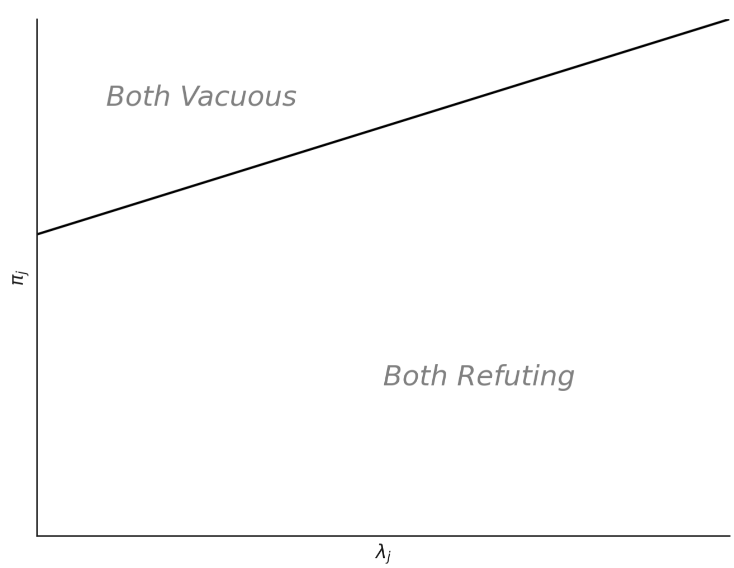
- *On any dimension $j \in N$ for which $\pi_j < \bar{\pi}_j(\lambda_j)$, in equilibrium both parties present refuting arguments.*

Conjecture first an equilibrium in which neither party attempts to change the voter's preferences on dimension j, i.e., both present vacuous arguments (equivalently, both leave dimension j out of the rhetorical discourse). The voter keeps her prior beliefs and thus in the platform game the parties will converge on policy $1 - 2\lambda_j$.

This 'tacit collusion' equilibrium can be a desirable outcome for risk-averse parties because it eliminates the risk of negative consequences from presenting arguments that could potentially backfire. However, a unilateral deviation is tempting when parties can use refuting arguments to capture the unconcerned voter type and mitigate risk.

When π_j is high, the voter is unlikely to be an unconcerned type and the risk of a refuting argument backfiring is higher. Consequently, neither party is as tempted to deviate, and the vacuous-arguments equilibrium can be sustained.

Figure 1: Equilibrium characterization for $\lambda_j > \frac{1}{2}$, baseline model.



For symmetric reasons, when π_j is low we cannot sustain an equilibrium in which neither party tries to persuade the voter. That is, the tacit collusion breaks down when a dimension is not ex-ante highly likely to be welfare-salient to the voter, as on such issues parties have greater hopes of successfully persuading her. Therefore, the equilibrium must feature non-vacuous arguments. Specifically, we find that in equilibrium both parties will present refuting arguments in an attempt to undermine the attractiveness of each other's preferred policy.

To understand this result, first notice that there are no conditions under which only one party engages in persuasion in equilibrium and presents a supporting argument. A deviation to a refuting argument is always profitable, as such an argument is more likely to resonate. Similarly we cannot sustain two supporting arguments in equilibrium: each party would prefer to unilaterally deviate to a vacuous argument to exploit the high probability of the opponent's argument backfiring.[25] Finally, we can easily see that the best response to a refuting argument must be to present a refuting argument as well. Deviating to either a supporting or vacuous argument would in fact allow the opponent to capture the unconcerned type, as described above.

Thus, under a low π_j the equilibrium must feature both parties presenting refuting arguments on dimension j in an attempt to sway the voter. We emphasize that the prevalence of refuting arguments does not stem from parties' risk-aversion: refuting arguments produce more favorable policy outcomes *in expectation*, thus parties would privilege this form of negative rhetoric even if they were risk-neutral.

Finally, we can characterize how the region in which parties present vacuous arguments in equilibrium changes as a function of λ_j:

Corollary 1. *$\bar{\pi}_j$ is increasing as λ_j moves away from $\frac{1}{2}$.*

As the voter's initial attitudes become more strongly favorable towards one party, the opponent will have stronger incentives to break the collusion and try to persuade the voter.

We conclude this section with a comment. We have briefly touched upon a simplifying assumption in our framework: the only difference between refuting and supporting arguments is how they partition the voter-type space, i.e., their likelihood of resonating with the voter. One may worry, however, that the voter may be intrinsically more skeptical of a refuting argument (see, e.g., An-

[25] A payoff-equivalent deviation would be to present a refuting argument, as such argument is informationally equivalent to the opponent's supporting one.

solabehere and Iyengar 1995), and that, therefore, successful persuasion may be harder to achieve with this form of rhetoric.

Reassuringly, however, we can allow for this possibility without altering the qualitative insights emerging from the model. For example, suppose that when a party chooses to present the voter with a refuting argument, the voter may only receive it with a probability of $\nu < 1$. In contrast, the voter always receives a supporting argument. This version of the model is isomorphic to the baseline. To see this, suppose R presents a refuting argument on dimension j. In the event that R's argument does not reach the voter, L would always prefer a refuting or vacuous argument over a supporting one, as presenting a supporting argument would mean the opponent could benefit from false positives. In the event that R's argument instead does reach the voter, presenting a supporting or vacuous argument would have no impact on the voter's beliefs and would not affect the equilibrium of the platform game (L's supporting argument would be informationally redundant). Thus, L would still be better off presenting a refuting argument, even if there is a risk that it may not reach the voter. In short, this risk affects the expected payoffs of the parties for different rhetorical strategies, but it does not alter their best responses. Therefore, the equilibrium results remain unchanged.

Persuasion with Constrained Parties

In the baseline model, parties may present non-vacuous arguments on all policy dimensions, should they wish to do so. Next, we consider the consequences of constraining the number of issues on which parties may attempt to persuade voters. Such constraints may arise because voters have limited attention spans and cognitive resources, making it difficult to absorb and process multiple messages on different policy dimensions, or because messages may be effective only if they are repeated frequently, which may not be feasible across a broad range of issues. While these constraints are irrelevant for groups or actors that only care about a single dimension, they become crucial when the party must coordinate its rhetorical strategy across multiple issues.

In this section, we assume that there are two policy dimensions, 1 and 2, but that each party is allowed to make a non-vacuous argument on one dimension at most. To simplify the statements of our results, we impose the restriction that λ_1 and λ_2 are neither both very low nor both very high. In other words, the voter is not ex-ante too right-leaning or left-leaning on both dimensions at once. This assumption is substantively plausible given the focus of the model on the two-party electoral competition between a right and a left party. Technically, it ensures the existence of pure-strategy equilibria but does not alter our qualitative insights.

As in the baseline model, when a dimension is ex-ante likely to be relevant for the voter (i.e., $\pi_j > \overline{\pi}_j$), parties will collude to exclude it from their rhetoric. In what follows, we therefore fix $\pi_j < \overline{\pi}_j$ for all dimensions $j \in \{1, 2\}$, as otherwise the constraint that parties must choose only one issue to engage on does not bind. Furthermore, imposing this constraint does not affect the prevalence of refuting arguments in equilibrium. However, in contrast to the baseline model where parties always counter each other's persuasion attempts, in this setting under some conditions parties talk past each other trying to persuade the voter on different dimensions.

Proposition 2. *Supporting arguments do not arise in equilibrium. Furthermore, there exist unique* $\widetilde{\lambda}_1(\pi_1, \pi_2)$ *and* $\widetilde{\lambda}_2(\pi_1, \pi_2)$ *s.t. an equilibrium in which both parties present refuting arguments on issue* j *exists only if* $\lambda_{-j} \in [\widetilde{\lambda}_{-j}, 1 - \widetilde{\lambda}_{-j}]$*, i.e., if neither party has a strong initial disadvantage on the other issue,* $-j$*. If* $\lambda_j \notin [\widetilde{\lambda}_j, 1 - \widetilde{\lambda}_j]$ *for both* $j \in \{1, 2\}$*, then parties present refuting arguments on different issues in equilibrium.*

To understand this result, assume that the voter initially leans heavily to the left on dimension 2 (i.e., λ_2 is high), and conjecture an equilibrium in which both parties engage on dimension 1. In our framework, parties have strong incentives to counteract each other's persuasion attempt by engaging on the same issue. However, because λ_2 is high, the right-wing party has a lot to gain from deviating from the conjectured equilibrium and exploiting the benefits of one-sided persuasion to change the voter's preferences on dimension 2. Thus, the conjectured equilibrium does not exist. A similar but symmetric rationale applies to the left-wing party when λ_2 is low.

Intuitively, parties have the strongest incentives to try to persuade the voters on issues over which they face an initial disadvantage. More precisely, say that R (L) has an initial disadvantage on issue j if $\lambda_j > \frac{1}{2}$ ($\lambda_j < \frac{1}{2}$). Then, assuming the two dimensions are comparable in terms of ex-ante welfare-salience, we have:

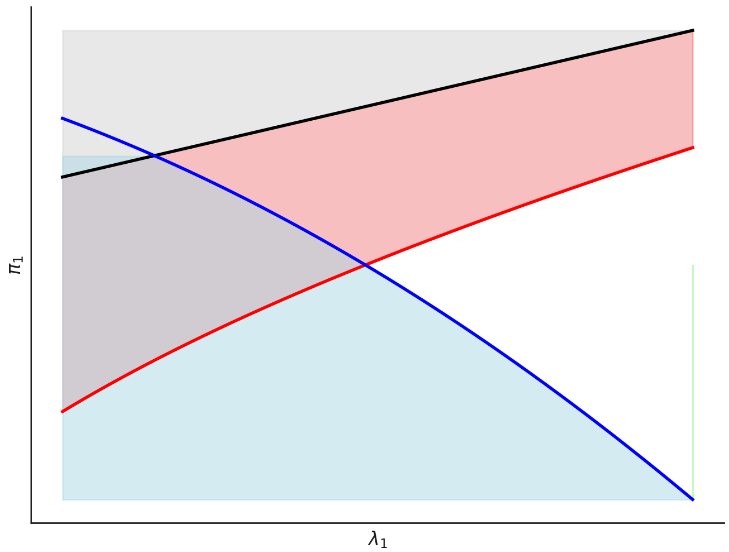
Corollary 2. *Suppose $\pi_1 = \pi_2$. Then, in an equilibrium in which the parties present refuting arguments on different issues, each party presents the argument on the dimension over which it has has an initial disadvantage.*

It is important to note that Corollary 2 does not suggest that political parties avoid discussing issues where they have an advantage. Instead, it indicates that when they do discuss such issues, they do so by presenting vacuous arguments and do not actively seek to change voter's preferences. If a party is already favored by the electorate on a certain issue, it has little incentive to accept the risks involved in attempting to persuade.

Figure 2 below provides a graphical representation of our findings. To facilitate comparison with the baseline model, the figure assumes $\lambda_1 = 1 - \lambda_2$ and, without loss of generality, also supposes that $\lambda_1 > \frac{1}{2}$. Recall that the constraint that parties must choose at most one issue to engage on binds if and only if π_1 is sufficiently low (i.e., $\pi_1 < \overline{\pi}_1$). This threshold $\overline{\pi}_1$ is represented by the black curve in the figure. The area below the black curve is therefore the one studied in Proposition 2.[26]

[26]We are assuming that π_2 is also low enough that parties would always want to present non-vacuous arguments on the second dimension in the unconstrained setting.

Figure 2: Equilibra for $\lambda_1 = 1 - \lambda_2$ and $\lambda_1 > \frac{1}{2}$.



In the red region, we have an equilibrium in which both parties present refuting arguments on issue 2. In the blue region, one in which both present such arguments on issue 1. In the white region, R presents a refuting argument on issue 1 and L on issue 2.

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As π_1 increases, it is harder to sustain an equilibrium in which both parties engage on issue 1, and easier to sustain one in which both attempt to persuade the voter on issue 2. In the graph, the blue curve is decreasing in π_1 while the red curve is increasing. This aligns with our intuition from the baseline: when the likelihood of an issue being relevant for the voter is high, parties worry less about their opponent capturing the unconcerned type on that dimension. As such, the incentives to counteract each other's persuasion attempt on this issue are weaker. Proposition 3A in the Online Appendix shows that this intuition holds more generally.

Argumentation and Frictions in Elections

So far, we have assumed a friction-less electoral process, with one voter, no noise, no cost of voting, and no valence considerations. As a result, parties always converge on the voter's preferred policy on each dimension (given her posterior beliefs) in the platform game. The relative importance the voter assigns to different policy issues is irrelevant for determining the equilibrium policy outcome.

This has significant implications for the parties' behavior during the argumentation stage. Since the voter's beliefs about the relative welfare salience of the different dimensions is inconsequential, parties are motivated to concentrate their efforts solely on the extensive margin of ideological persuasion, which involves manipulating the voter's directional preferences. Because refuting arguments are more likely to resonate with the voter, supporting arguments cannot be sustained in equilibrium.

However, frictions may arise in real-world elections. For example, party affiliation or the leaders' popularity may influence voters' decisions at the ballot box, even fixing their induced policy preferences. In such scenarios, voters may have to balance policy considerations against other factors. This, in turn, implies that the weight they attach to each issue, and not only their preferences along the left-right spectrum, would be relevant for equilibrium outcomes. As a consequence, parties would care about both the intensive and extensive margins of political persuasion, with incentives to pull the voter's ideological beliefs in their preferred direction *and* to increase the salience she places on the issue.

This generates a trade-off for political parties. Refuting arguments are more likely to resonate with the voter, and thus are more effective on the extensive margin, because these arguments exploit the ambiguity the voter faces when only getting one side of the story. As previously noted, for precisely the same reason supporting arguments induce higher salience (i.e., a higher posterior $\widehat{\pi}_j$ that issue j is relevant for the voter) when they resonate, and are thus better on the intensive margin.

In order to study this trade-off, we amend the baseline model to incorporate non-policy considerations influencing the voter's behavior. We assume that, after the argumentation stage but before the platform game, a valence shock δ in favor of one of the parties is realized and publicly observed. If, for example, the valence shock favors the left-wing party, then voting for this party gives the voter a higher utility, everything else being equal. For simplicity, we consider a unidimensional policy space. To avoid trivialities, we assume $\delta < 4\pi_j$, ensuring that one-sided persuasion can, in principle, be electorally relevant.

In this context, the party favored by the valence shock is able to win the election with a platform closer to its own preferred point than is the case in the baseline model. The magnitude of this effect is a function of the voter's posterior beliefs over the welfare-salience of the policy issue under consideration, $\widehat{\pi}_j$. The higher $\widehat{\pi}_j$, the more the voter cares about policy versus valence considerations, and thus the stronger the constraint that the voter's induced policy preferences place on the valence-advantaged party. Conditional on directional persuasion being successful, increasing the voter's salience of the policy choice therefore limits a party's potential loss from an unfavorable valence shock.[27]

The larger the value of δ, the higher the equilibrium advantage of the party favored by the shock. Thus, when the magnitude of such a shock is higher, parties value the intensive margin more; when it is lower, they continue to concentrate on the extensive margin of persuasion, as in the baseline model.

Proposition 3. *There exist unique $\pi_j^\dagger$, $\widehat{\delta}$ and $\widetilde{\delta}$, with $\widehat{\delta} \leq \widetilde{\delta}$, s.t.*

- *Supporting arguments can be sustained in equilibrium only if $\delta > \widehat{\delta}$;*
- *If $\delta > \widetilde{\delta}$ and $\pi_j < \pi_j^\dagger$, then the unique equilibrium is for both parties to present supporting arguments.*

The trade-off between intensive and extensive margins that underlies this result is not confined to settings where voters have preferences over non-policy aspects. It arises whenever parties don't converge on every dimension in the platform game. For instance, there might be uncertainty about how voters update their policy preferences, or parties might have less flexibility (i.e., no commitment power) on some of the issues and be exogenously associated with certain stances. In these scenarios, the relative salience the voter places on the different issues becomes relevant for equilibrium outcomes, similarly to what described above. As such, parties again need to balance

[27]Notice that, while in the baseline model the outcome of the argumentation stage influences the equilibrium policy only, in this extended setup the expected identity of the winner of the election is also impacted.

the intensive and extensive margins of persuasion, sometimes leading to the adoption of supporting arguments in equilibrium.

A Richer Argument Space

So far, we have assumed that each party can make only one non-vacuous argument, either supporting or refuting, on each dimension. Here, we return to the baseline model (where the voter only cares about policy and no valence considerations arise) and augment it with a richer argument space. As we previously mentioned, we can think about arguments as experiments. In this extension, we allow parties to run *any* experiment, only maintaining the restriction that the outcome must be truthful. This implies that parties can choose to present a refuting, supporting, or vacuous argument, as in the baseline model, a *salience* argument, that aims to persuade the voter that she should or should not care about a specific dimension, or a combination of multiple arguments.[28]

In what follows, we assume that each party pays an arbitrarily small cost for each non-vacuous argument it presents.[29] This assumption has no effect on the results of the baseline model, but ensures equilibrium uniqueness in this richer argument space. Then, we have:

Proposition 4. *There exist unique* $\underline{\lambda}_j < \frac{1}{2} < \overline{\lambda}_j$ *and* $\widetilde{\pi}_j(\lambda_j)$ *such that, in equilibrium,*

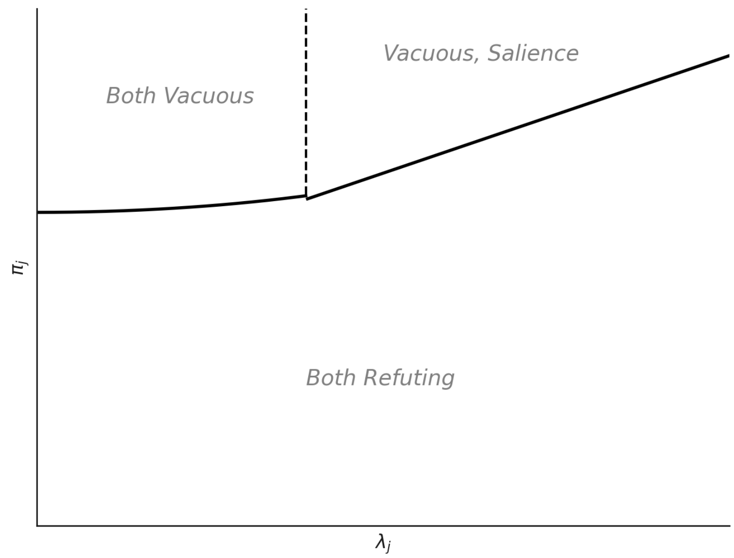
- *If* $\pi_j < \widetilde{\pi}_j$, *then both parties present refuting arguments;*
- *If* $\pi_j > \widetilde{\pi}_i$ *and* $\lambda_j \in (\underline{\lambda}_j, \overline{\lambda}_j)$, *then both parties present vacuous arguments;*
- *If* $\pi_j > \widetilde{\pi}_j$ *and* $\leq \underline{\lambda}_j$, *then* L *presents a salience argument and* R *a vacuous one;*
- *If* $\pi_j > \widetilde{\pi}_j$ *and* $\lambda_j \geq \overline{\lambda}_j$, *then* R *presents a salience argument and* L *a vacuous one.*

Proposition 4 shows that the results of the baseline continue to hold hen λ_j takes an intermediate value, so that neither party is initially strongly advantaged on dimension j. In this scenario, both parties present refuting arguments when π_j is low, and they implicitly collude by presenting vacuous arguments when π_j is high.

[28] To use our cups analogy, we allow each party to flip any subset of cups.

[29] Flipping two cups is twice as costly as flipping one (although the cost remains arbitrarily small).

Figure 3: Equilibrium characterization for $\lambda_j > \frac{1}{2}$, richer argument space model.



However, when λ_j is either very high or very low, and the dimension is initially highly likely to be welfare-salient for the voter (i.e., π_j is high), the disadvantaged party strategically chooses to present a salience argument. Their goal is to persuade the voter that she should not prioritize or be concerned about this particular issue, rather than trying to change the voter's directional preference. To understand the intuition, suppose that λ_j is very high, implying that the voter initially has a strong left-leaning inclination on this dimension. In such cases, if no argument is presented, the equilibrium policy will be highly unfavorable for the right-wing party. However, precisely because λ_j is high, an ideological argument attempting to shift the voter to the right is likely to be ineffective. Consequently, the disadvantaged right-wing party adopts a different approach and strategically opts for a salience argument, in hopes of diminishing the electoral relevance of this particular issue.

As an example, consider the rhetoric Republican candidates and congressmen have recently adopted on the issue of reproductive rights. Following a streak of ballot-box wins for reproductive rights groups, GOP politicians are becoming wary of the issue. In line with the logic of our model, many Republicans are now claiming that abortion should not be a relevant concern for voters in federal elections–see e.g., Nikki Haley's claim "No Republican president can ban abortions, any more than a Democrat president can ban any state law."[30]

Conclusion

We presented a model of rhetorical argumentation where political parties compete to persuade a voter before engaging in platform competition, and analyzed several extensions to gain a better understanding of the trade-offs and strategic incentives underlying parties' rhetorical choices. Having summarized our results in detail in our Preview of Results section, we forego doing it here.

We thus conclude by noting that our model provides a useful starting point for exploring the role of rhetorical argumentation in shaping public opinion and winning elections Two directions seem particularly promising for future research. First, for convenience our model features a single voter. A natural next step is to extend the model to account for multiple constituencies and investigate how parties' rhetorical strategies differ across different groups of voters. Second, our discussion highlights that the existing literature on parties' rhetorical strategies primarily examines electoral campaigns, concentrating on the weeks or days leading up to elections *after* the parties' electoral platforms have been established. Our paper underscores the importance of augmenting this body of work, to study parties' strategies *throughout* the electoral cycle and the impact of their competition for rhetorical persuasion on the platforms *subsequently* proposed during elections.

[30]Nikki Haley https://rollcall.com/2024/01/25/gop-pivots-on-abortion-stance-as-2024-nears/

References

Ansolabehere, Stephen and Shanto Iyengar. 1995. "Going negative: How political advertisements shrink and polarize the electorate.".

Aragonès, Enriqueta, Micael Castanheira and Marco Giani. 2015. "Electoral competition through issue selection." *American journal of political science* 59(1):71–90.

Bail, Christopher A, Lisa P Argyle, Taylor W Brown, John P Bumpus, Haohan Chen, MB Fallin Hunzaker, Jaemin Lee, Marcus Mann, Friedolin Merhout and Alexander Volfovsky. 2018. "Exposure to opposing views on social media can increase political polarization." *Proceedings of the National Academy of Sciences* 115(37):9216–9221.

Benabou, Roland and Jean Tirole. 2006. "Belief in a just world and redistributive politics." *The Quarterly journal of economics* 121(2):699–746.

Campbell, Angus, Philip E Converse, Warren E Miller and Donald E Stokes. 1960. *The American Voter*. John Wiley & Sons.

Chong, Dennis and James N Druckman. 2007. "Framing public opinion in competitive democracies." *American Political Science Review* 101(4):637–655.

Dragu, Tiberiu and Xiaochen Fan. 2016. "An agenda-setting theory of electoral competition." *The Journal of Politics* 78(4):1170–1183.

Druckman, James N, Jordan Fein and Thomas J Leeper. 2012. "A source of bias in public opinion stability." *American Political Science Review* 106(2):430–454.

Dür, Andreas. 2019. "How interest groups influence public opinion: Arguments matter more than the sources." *European journal of political research* 58(2):514–535.

Dür, Andreas and Gemma Mateo. 2014. "Public opinion and interest group influence: how citizen groups derailed the Anti-Counterfeiting Trade Agreement." *Journal of European Public Policy* 21(8):1199–1217.

Dziuda, Wioletta. 2011. "Strategic argumentation." *Journal of Economic Theory* 146(4):1362–1397.

Eliaz, Kfir and Ran Spiegler. 2020. "A model of competing narratives." *American Economic Review* 110(12):3786–3816.

Hafer, Catherine and Dimitri Landa. 2007. "Deliberation as self-discovery and institutions for political speech." *Journal of theoretical Politics* 19(3):329–360.

Izzo, Federica, Gregory J Martin and Steven Callander. 2023. "Ideological Competition." *American Journal of Political Science* .

Jerit, Jennifer. 2008. "Issue framing and engagement: Rhetorical strategy in public policy debates." *Political Behavior* 30:1–24.

Kamenica, Emir and Matthew Gentzkow. 2011. "Bayesian persuasion." *American Economic Review* 101(6):2590–2615.

Levy, Gilat, Ronny Razin and Alwyn Young. 2022. "Misspecified Politics and the Recurrence of Populism." *American Economic Review* 112(3):928–62.
URL: *https://www.aeaweb.org/articles?id=10.1257/aer.20210154*

Minozzi, William and David A Siegel. 2010. A theory of deliberation as interactive reasoning. In *Annual Meeting of the Midwest Political Science Association, Chicago, Il.*

Nelson, Thomas E. 2004. "Policy goals, public rhetoric, and political attitudes." *The Journal of Politics* 66(2):581–605.

Nelson, Thomas E, Rosalee A Clawson and Zoe M Oxley. 1997. "Media framing of a civil liberties conflict and its effect on tolerance." *American Political Science Review* 91(3):567–583.

Polborn, Mattias K and David T Yi. 2006. "Informative positive and negative campaigning." *Quarterly Journal of Political Science* 1(4):351–371.

Roemer, John E. 1994. “The strategic role of party ideology when voters are uncertain about how the economy works.” *American Political Science Review* 88(2):327–335.

Skaperdas, Stergios and Bernard Grofman. 1995. “Modeling negative campaigning.” *American Political Science Review* 89(1):49–61.

Slothuus, Rune and Claes H De Vreese. 2010. “Political parties, motivated reasoning, and issue framing effects.” *The Journal of Politics* 72(3):630–645.

Truman, David Bicknell. 1951. “The governmental process: Political interests and public opinion.”.

Wood, Thomas and Ethan Porter. 2019. “The elusive backfire effect: Mass attitudes’ steadfast factual adherence.” *Political Behavior* 41:135–163.

Appendix

Lemma 1. *In equilibrium the parties always win with equal probability. Further,*

- *if* $\hat{\pi}_j = 0$*, then in equilibrium* $\tilde{x}^R_j = x^R_j$ *and* $\tilde{x}^L_j = x^L_j$*;*
- *if* $\hat{\pi}_j > 0$*, then in equilibrium* $x^R_j = x^L_j = x^v_j$*;*

Proof. The proof follows the usual logic in Downsian models and is therefore omitted. □

Proposition 1. *The exists a unique* $\bar{\pi}_j(\lambda_j)$ *s.t.*

- *On any dimension* $j \in N$ *for which* $\pi_j > \bar{\pi}_j(\lambda_j)$*, in equilibrium both parties present vacuous arguments;*
- *On any dimension* $j \in N$ *for which* $\pi_j < \bar{\pi}_j(\lambda_j)$*, in equilibrium both parties present refuting arguments;*

Proof. First of all, it is useful to compute the players' expected utility for any argument profile. Recall that, since the parties converge on all dimensions in the platform game, they treat each dimension separately in the argumentation stage, as if it was the only available. Then, denote $E[U^j_i(a^R_j, a^L_j)]$ i's expected equilibrium utility on dimension j as a function of the arguments presented by the two parties.

Then, we have

$$E[U^j_i(a^R_j = r, a^L_j = r)] = E[U^j_i(a^R_j = s, a^L_j = s)] = \\ -\frac{(1-\pi_j)}{2}(\tilde{x}^i_j - \tilde{x}^{-i}_j)^2 - \pi_j\lambda_j(-1-\tilde{x}^j_i)^2 - \pi_j(1-\lambda_j)(1-\tilde{x}^i_j)^2 \tag{3}$$

$$E[U^j_i(a^R_j = r, a^L_j = s)] = E[U^j_i(a^R_j = r, a^L_j = v)] = E[U^j_i(a^R_j = v, a^L_j = s)] = \\ -\pi_j\lambda_j(-1-\tilde{x}^i_j)^2 - (1-\pi_j\lambda_j)(1-\tilde{x}^i_j)^2 \tag{4}$$

$$E[U_i^j(a_j^R = s, a_j^L = r)] = E[U_i^j(a_j^R = s, a_j^L = v)] = E[U_i^j(a_j^R = v, a_j^L = r)] = \\ -\pi_j(1-\lambda_j)(1-\tilde{x}_j^i)^2 - \Big(1-\pi_j(1-\lambda_j)\Big)(-1-\tilde{x}_j^i)^2 \tag{5}$$

$$E[U_i^j(a_j^R = v, a_j^L = v)] = \\ -(1-2\lambda_j-\tilde{x}_j^i)^2 \tag{6}$$

Setting $\tilde{x}_j^R = -\tilde{x}_j^L = 1$, we obtain that $E[U_L^j(a_j^R = s, a_j^L = r)] = E[U_L^j(a_j^R = s, a_j^L = v)] = E[U_L^j(a_j^R = v, a_j^L = r)] > E[U_L^j(a_j^R = r, a_j^L = r)] = E[U_L^j(a_j^R = s, a_j^L = s)] > E[U_L^j(a_j^R = r, a_j^L = s)] = E[U_L^j(a_j^R = r, a_j^L = v)] = E[U_L^j(a_j^R = v, a_j^L = s)]$. Similar results hold for R. This implies that we cannot sustain an equilibrium with both parties presenting a supporting argument, as each party has a profitable deviation to a vacuous argument. Similarly, we cannot sustain an equilibrium where one party presents a supporting argument and the other a refuting or vacuous one, as the party presenting the supporting argument has a profitable deviation to a refuting one. Finally, we cannot sustain an equilibrium with one party presenting a refuting argument and the other a vacuous one, as the latter can profitably deviate to a refuting argument. This only leaves two equilibrium candidates: $(a_j^R = v, a_j^L = v)$ and $(a_j^R = r, a_j^L = r)$.

First, conjecture an equilibrium in which both parties present vacuous arguments on dimension j. The equilibrium exists if an only if the following conditions are jointly satisfied:

$$-\Big(x_j^L - (1-2\lambda_j)\Big)^2 > \max \in \Big\{ -\pi_j\lambda_j\Big(x_j^L+1\Big)^2 - (1-\pi_j\lambda_j)\Big(x_j^L-1\Big)^2; \\ -\pi_j(1-\lambda_j)\Big(x_j^L-1\Big)^2 - \Big(1-\pi_j(1-\lambda_j)\Big)\Big(x_j^L+1\Big)^2\Big\} \tag{7}$$

and

$$-\Big(\tilde{x}_j^R - (1-2\lambda_j)\Big)^2 > \max \in \Big\{ -\pi_j\lambda_j\Big(\tilde{x}_j^R+1\Big)^2 - (1-\pi_j\lambda_j)\Big(\tilde{x}_j^R-1\Big)^2; \\ -\pi_j(1-\lambda_j)\Big(\tilde{x}_j^R-1\Big)^2 - \Big(1-\pi_j(1-\lambda_j)\Big)\Big(\tilde{x}_j^R+1\Big)^2\Big\} \tag{8}$$

Setting $\tilde{x}_j^R = -\tilde{x}_j^L = 1$, rearranging and simplifying, we obtain that the equilibrium exists if and only if $\pi_j > \bar{\pi}_j = \max \in \Big\{\lambda_j, 1-\lambda_j\Big\}$.

Finally, conjecture an equilibrium in which both parties present refuting arguments. The equilibrium exists if and only if $(\tilde{x}_j^R - x_j^L)^2 \leq \min \in \{2(x_j^L - 1)^2; 2(\tilde{x}_j^R + 1)^2\}$, which is always satisfied under $\tilde{x}_j^R = -\tilde{x}_j^L = 1$.

To conclude our proof, we apply our equilibrium refinement:

Proposition 1A. *When an equilibrium in which both parties present vacuous arguments exists, it is the one that gives both parties highest expected utility.*

Proof. We only need to show that the vacuous arguments equilibrium gives both parties higher expected payoff than an equilibrium in which both present supporting (or refuting) arguments. This holds if and only if

$$-(1-2\lambda_j - \tilde{x}_j^i)^2 > -\frac{1-\pi_j}{2}(\tilde{x}_j^R - \tilde{x}_j^L)^2 - \pi_j\lambda_j(-1-\tilde{x}_j^i)^2 - \pi_j(1-\lambda_j)(1-\tilde{x}_j^i)^2, \tag{9}$$

for all $i \in \{L, R\}$. This is always satisfied under the conditions $\pi_j > \max\{\lambda_j, 1-\lambda_j\}$. □

□

Corollary 1. $\bar{\pi}_j$ *is increasing as* λ_j *moves away from* $\frac{1}{2}$.

Proof. Follows from $\bar{\pi}_j = \max\{\lambda_j, 1-\lambda_j\}$. □

Proposition 2A. *Suppose* $\tilde{x}_j \geq 1$*, for all* $j \in N$*. Then, there exist unique* $\bar{\pi}_j(\tilde{x}_j, \lambda_j)$ *and* $\bar{x}_j > 1$ *s.t.,*

- *On any dimension for which* $\pi_j > \bar{\pi}_j(\tilde{x}_j, \lambda_j)$*, both parties present vacuous arguments;*
- *On any dimension for which* $\pi_j < \bar{\pi}_j(\tilde{x}_j, \lambda_j)$ *and* $\tilde{x}_j < \bar{x}_j$*, both parties present refuting arguments;*

- *On any dimension for which $\pi_j < \bar{\pi}_j(\tilde{x}_j, \lambda_j)$ and $\tilde{x}_j > \bar{x}_j$*
  - *there exist one-sided persuasion equilibria where only one party presents a non-vacuous refuting argument, and*
  - *there exist equilibria where both parties present a non-vacuous argument, with one presenting a refuting argument and the other presenting a supporting one.*

  All of these equilibria induce the same lottery over policies.

Proof. The proof uses equations (3)-(6), setting $\tilde{x}_j^L < -1 < 1 < \tilde{x}_j^R$.

First, we note that there exists no equilibrium in which both parties present supporting arguments on dimension j. The conjectured equilibrium exists if and only if $(\tilde{x}_j^R - x_j^L)^2 \leq \min \in \{2(x_j^L + 1)^2; 2(\tilde{x}_j^R - 1)^2\}$. The condition can never be satisfied under $x_j^L \leq -1 < 1 \leq \tilde{x}_j^R$. Instead, conjecture an equilibrium in which one party presents a supporting argument and the other a refuting one. For example, $a_j^R = s$ and $a_j^L = r$. We can show that this equilibrium exists if and only if $(\tilde{x}^R - \tilde{x}^L)^2 \geq 2(-1 - \tilde{x}^R)^2$. Symmetric logic reveals that an equilibrium in which $a_j^R = r$ and $a_j^L = a$ exists if and only if $(\tilde{x}^R - \tilde{x}^L)^2 \geq 2(1 - \tilde{x}^L)^2$.

Next, we show that if in equilibrium only one party presents a non-vacuous argument on dimension j, then it must be the case that the presented argument is a refuting one. Conjecture an equilibrium in which $a_j^L = \emptyset$ and $a_j^R = s$. We can easily show that R always has a profitable deviation to $a_j^R = r$. This holds if and only if:

$$-\pi_j(1-\lambda_j)(1-\tilde{x}_j^R)^2 - \Big(1-\pi_j(1-\lambda_j)\Big)(-1-\tilde{x}_j^R)^2 < -\pi_j\lambda_j(-1-\tilde{x}_j^R)^2 - (1-\pi_j\lambda_j)(1-\tilde{x}_j^R)^2. \quad (10)$$

This reduces to

$$(1 - \tilde{x}_j^R)^2 - (-1 - \tilde{x}_j^R)^2 < 0, \quad (11)$$

which is always true. Similar argument applies to $a_j^R = \emptyset$ and $a_j^L = s$.

However, we can under some conditions sustain one-sided persuasion equilibria involving negative campaigning. In particular, an equilibrium in which $a_j^R = \emptyset$ and $a_j^L = r$ exists if and only if the following conditions are jointly satisfied:

$$-\pi_j(1-\lambda_j)(1-\tilde{x}_j^L)^2 - \Big(1-\pi_j(1-\lambda_j)\Big)(-1-\tilde{x}_j^L)^2 \geq -(1-2\lambda_j-\tilde{x}_j^L)^2, \tag{12}$$

and

$$-\pi_j(1-\lambda_j)(1-\tilde{x}_j^R)^2-\Big(1-\pi_j(1-\lambda_j)\Big)(-1-\tilde{x}_j^R)^2 \geq -\pi\lambda_j(-1-\tilde{x}_j^R)^2-\pi_j(1-\lambda_j)(1-\tilde{x}_j^R)^2-\frac{1-\pi_j}{2}(x_j^L-\tilde{x}_j^R)^2. \tag{13}$$

These reduce, respectively, to

$$\pi_j \leq 1 + \frac{\lambda_j}{x_j^L}, \tag{14}$$

and

$$-2(-1-\tilde{x}_j^R)^2 + (x_j^L - \tilde{x}_j^R)^2 \geq 0. \tag{15}$$

Symmetric logic applies to $a_j^L = \emptyset$ and $a_j^R = r$, and yields that this equilibrium exists if and only if $\pi_j \leq 1 - \frac{(1-\lambda_j)}{\tilde{x}_j^R}$ and $(x_j^L - \tilde{x}_j^R)^2 \geq 2(x_j^L - 1)^2$.

Finally, from the proof of Proposition 1 and allowing for $1 < \tilde{x}_j^R \neq \tilde{x}_j^L < -1$, we obtain the conditions for existence of a vacuous-vacuous equilibrium and a refuting-refuting one. Applying our equilibrium refinement criterion, we obtain the results from Proposition 2A □

Proposition 2. *There exist unique $\widetilde{\lambda}_1(\pi_1,\pi_2)$ and $\widetilde{\lambda}_2(\pi_1,\pi_2)$ s.t. an equilibrium in which the parties engage on different issues exists iff $\lambda_j \notin [\widetilde{\lambda}_1, 1-\widetilde{\lambda}_1]$ for both $j \in \{1,2\}$. Otherwise, they engage on the same issue in equilibrium. Furthermore, an equilibrium in which both parties engage on issue j exists only if $\lambda_{-j} \in [\widetilde{\lambda}_{-j}, 1-\widetilde{\lambda}_{-j}]$, i.e., neither party has a strong initial disadvantage on the other issue $-j$.*

Proof. We know from the baseline model that, absent a constraint, the best response to a refuting argument on dimension j is a refuting argument on dimension j. Consider now the constrained world. The only reason why party i may choose not to present a refuting argument on one dimension is to be able to present a refuting argument on the other.

Assuming that R chooses r on dimension j, it is better for L to choose r on j than to choose r on dimension k iff

$$-4[\pi_j(1-\lambda_j)+\frac{1}{2}(1-\pi_j)-(1-\pi_j\lambda_j)] \geq -4[\pi_k(1-\lambda_k)-(1-\lambda_k)^2], \tag{16}$$

which reduces to

$$\frac{2-\pi_k-\sqrt{\pi_k^2+2(1-\pi_j)}}{2} \leq \lambda_k \leq \frac{2-\pi_k+\sqrt{\pi_k^2+2(1-\pi_j)}}{2}. \tag{17}$$

Similarly, Assuming that L chooses r on dimension j, it is better for R to choose r on j than to choose r on dimension k iff

$$\frac{\pi_k-\sqrt{\pi_k^2+2(1-\pi_j)}}{2} \leq \lambda_k \leq \frac{\pi_k+\sqrt{\pi_k^2+2(1-\pi_j)}}{2}. \tag{18}$$

Let

$$\frac{2-\pi_k-\sqrt{\pi_k^2+2(1-\pi_j)}}{2} = 1-\left(\frac{\pi_k+\sqrt{\pi_k^2+2(1-\pi_j)}}{2}\right) := \widetilde{D}(\pi_k,\pi_j), \tag{19}$$

and

$$\frac{2-\pi_k+\sqrt{\pi_k^2+2(1-\pi_j)}}{2} = 1-\left(\frac{\pi_k-\sqrt{\pi_k^2+2(1-\pi_j)}}{2}\right) := \widehat{D}(\pi_k,\pi_j). \tag{20}$$

We can then rewrite (17) and (18) as

$$\widetilde{D}(\pi_k,\pi_{-k}) < \lambda_k < \widehat{D}(\pi_k,\pi_{-k}) \quad \text{and} \tag{21}$$

$$1-\widehat{D}(\pi_k,\pi_{-k}) < \lambda_k < 1-\widetilde{D}(\pi_k,\pi_{-k}), \tag{22}$$

respectively.

Notice that $\widehat{D}(\pi_k,\pi_{-k}) > 1$ (and thus $1-\widehat{D}(\pi_k,\pi_{-k}) < 0$). Thus, combining the above results we obtain that:

1. There exists an equilibrium in which both parties engage on dimension 1 iff $\widetilde{D}(\pi_2, \pi_1) \leq \lambda_2 \leq 1 - \widetilde{D}(\pi_2, \pi_1)$.

2. There exists an equilibrium in which both parties engage on dimension 2 iff $\widetilde{D}(\pi_1, \pi_2) \leq \lambda_1 \leq 1 - \widetilde{D}(\pi_1, \pi_2)$.

3. There exists an equilibrium in which L engages on dimension 1 while R engages on dimension 2 iff $\lambda_1 \notin [\widetilde{D}(\pi_1, \pi_2), \widehat{D}(\pi_1, \pi_2)]$ and $\lambda_2 \notin [1 - \widehat{D}(\pi_2, \pi_1), 1 - \widetilde{D}(\pi_2, \pi_1)]$. Given $\widehat{D}(\cdot, \cdot)] > 1$, these conditions reduce to $\lambda_1 < \widetilde{D}(\pi_1, \pi_2)$ and $\lambda_2 > 1 - \widetilde{D}(\pi_2, \pi_1)$.

4. There exists an equilibrium in which L engages on dimension 2 while R engages on dimension 1 iff $\lambda_2 \notin [\widetilde{D}(\pi_2, \pi_1), \widehat{D}(\pi_2, \pi_1)]$ and $\lambda_1 \notin [1 - \widehat{D}(\pi_1, \pi_2), 1 - \widetilde{D}(\pi_1, \pi_2)]$. Given $\widehat{D}(\cdot, \cdot)] > 1$, these conditions reduce to $\lambda_2 < \widetilde{D}(\pi_2, \pi_1)$ and $\lambda_1 > 1 - \widetilde{D}(\pi_1, \pi_2)$.

This concludes the proof of Proposition 2. □

Corollary 2. *Suppose $\pi_1 = \pi_2$. Then, in an equilibrium in which the parties engage on different issues, each party engages on the dimension over which it has has an initial disadvantage.*

Proof. Follows from the proof of Proposition 2, noting that $\widetilde{D}(\cdot, \cdot) < \frac{1}{2}$. □

Proposition 3A. *Let $\pi_1' > \pi_1''$. Then:*

1. *The set of (λ_1, λ_2) that supports both parties engage on 1 in equilibrium for π_1' is a subset of those that support that equilibrium for π_1'';*

2. *The set of (λ_1, λ_2) that supports both parties engaging on 2 in equilibrium for π_1'' is a subset of those that support that equilibrium for π_1';*

Proof. Follows from inspection of the above conditions. □

Proposition 3. *There exist unique $\widehat{\delta}$ and $\widetilde{\delta}$, with $\widehat{\delta} \leq \widetilde{\delta}$, s.t.*

- *Supporting arguments can be sustained in equilibrium only if* $\delta > \widehat{\delta}$*;*
- *If* $\delta > \widetilde{\delta}$*, then the unique equilibrium is for both parties to present supporting arguments.*

Proof. In order to prove Proposition 4, we must first characterize the equilibrium of the platform game:

Lemma 1A. *Suppose that the valence shock realizes in favor of* L*. Then in equilibrium* $x_j = \max\{-1, 1 - 2\widehat{\lambda}_j - \sqrt{\frac{\delta}{\pi}}\}$*. Suppose instead that the valence shock realizes in favor of* R*. Then in equilibrium* $x_j \min\{+1, 1 - 2\widehat{\lambda}_j + \sqrt{\frac{\delta}{\pi}}\}$*.*

Proof. Recall that x_j is the policy implemented in equilibrium. The result then follows the usual logic in Downsian models with a valence advantaged candidate.

□

Next, we establish that necessary condition to sustain supporting arguments in equilibrium is that δ is sufficiently large. Recall that we are assuming $\delta < 4\pi$. Further, denote ν_R the probability that the valence shock favors the right-wing party. First, we show that there exists a $\widehat{\delta}$ s.t. supporting arguments can be sustained in equilibrium only if $\delta > \widehat{\delta}$. Focusing w.l.o.g. on party L, there are three argument profiles we must consider: 1) $(a_j^R = s, a_j^L = s)$, 2) $(a_j^R = r, a_j^L = s)$, 3) $(a_j^R = v, a_j^L = s)$. We will establish that, for each conjecture, a mecessary condition for L to have no profitable deviation is that δ is sufficiently high.

Conjecture first an equilibrium in which both parties present a supporting argument. In the conjectured equilibrium, L gets expected payoff

$$-(1-\pi)\nu_R 4 - \pi\lambda\nu_R\delta - \pi(1-\lambda)\nu_R 4 - \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2. \tag{23}$$

A deviation to a vacuous or refuting argument yields

$$-\pi(1-\lambda)\nu_R 4 - \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2 - (1-\pi(1-\lambda))\nu_R\frac{\delta}{\pi}. \tag{24}$$

Thus, the deviation is profitable iff

$$-(1-\pi)\nu_R 4 - \pi\lambda\nu_R\delta - \pi(1-\lambda)\nu_R 4 - \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2 \qquad (25)$$
$$+\pi(1-\lambda)\nu_R 4 + \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2 + (1-\pi(1-\lambda))\nu_R\frac{\delta}{\pi} < 0.$$

The LHS is continuous and strictly increasing in δ. The condition is satisfied when $\delta = 0$ and fails at $\delta = 4\pi$. Thus, there exists a threshold s.t. necessary condition for L to have no profitable deviation is that δ is above the threshold.

Next, conjecture an equilibrium in which L, presents a supporting argument and R presents a vacuous one. In the conjectured equilibrium L's expected payoff is

$$-\pi\lambda\nu_R\delta - (1-\pi\lambda)\nu_R 4 - (1-\pi\lambda)(1-\nu_R)(2-\sqrt{\frac{\delta}{\pi}})^2. \qquad (26)$$

A deviation to a vacuous argument yields

$$-\nu_R(1-2\lambda_j+\frac{\delta}{\pi_j}+1)^2 - (1-\nu_R)(1-2\lambda_j-\frac{\delta}{\pi_j}+1)^2, \qquad (27)$$

and is therefore profitable iff

$$-\nu_R(1-2\lambda_j+\frac{\delta}{\pi_j}+1)^2 - (1-\nu_R)(1-2\lambda_j-\frac{\delta}{\pi_j}+1)^2 \qquad (28)$$
$$+\pi\lambda\nu_R\delta + (1-\pi\lambda)\nu_R 4 + (1-\pi\lambda)(1-\nu_R)(2-\sqrt{\frac{\delta}{\pi}})^2 > 0.$$

The LHS is continuous and decreasing in δ, and the condition is satisfied at $\delta = 0$ but fails at $\delta = 4\pi$. Again, there must exist a unique threshold s.t. necessary condition for L to have no profitable deviation is that δ is above the threshold.

Finally, conjecture an equilibrium in which L presents a supporting argument and R presents a refuting one. In the conjectured equilibrium L's expected payoff is

$$-\pi\lambda\nu_R\delta - (1-\pi\lambda)\nu_R 4 - (1-\pi\lambda)(1-\nu_R)(2-\sqrt{\frac{\delta}{\pi}})^2. \tag{29}$$

A deviation to a refuting argument yields

$$-(1-\pi)\nu_R 4 - \pi\lambda\nu_R\delta - \pi(1-\lambda)\nu_R 4 - \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2, \tag{30}$$

and is profitable unless

$$\begin{gathered} -\pi\lambda\nu_R\delta - (1-\pi\lambda)\nu_R 4 - (1-\pi\lambda)(1-\nu_R)(2-\sqrt{\frac{\delta}{\pi}})^2 \\ (1-\pi)\nu_R 4 + \pi\lambda\nu_R\delta - \pi(1-\lambda)\nu_R 4 + \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2 > 0 \end{gathered} \tag{31}$$

The LHS is concave in δ, always satisfied at $\delta = 4\pi$ and never satisfied at $\delta = 0$. As above, there must exist a unique threshold s.t. the deviation is profitable iff δ is below the threshold.

Therefore, the exists a threshold $\widetilde{\delta}$ s.t. supporting arguments can be sustained in equilibrium only if $\delta > \widetilde{\delta}$. This threshold is characterized by identifying the least binding no-deviation condition (across players and conjectures), and choosing the δ that satisfies the condition with equality.

Finally, we show that there exists a second (higher) threshold $\widehat{\delta}$ s.t. when $\delta > \widehat{\delta}$ and π_j is sufficiently low, the unique equilibrium must be for both parties to present supporting arguments.

First, we know from the above analysis that there exists a unique cutoff s.t. an equilibrium in which both parties present supporting arguments exists iff δ is above this cutoff. This also implies that above this cutoff we cannot sustain equilibria in which only one party presents a supporting argument, as the other will have a profitable deviation. The above analysis also establishes that an equilibrium with two vacuous arguments cannot be sustained when δ is sufficiently high, as each party has a profitable deviation to a supporting one. Next, conjecture an equilibrium where both parties present a refuting argument. The no-deviation condition for L is

$$-(1-\pi)\nu_R 4 - \pi\lambda\nu_R\delta - \pi(1-\lambda)\nu_R 4 - \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2 \geq \tag{32}$$
$$-\pi\lambda\nu_R\delta - (1-\pi\lambda)\nu_R 4 - (1-\pi\lambda)(1-\nu_R)(2-\sqrt{\frac{\delta}{\pi}})^2.$$

Both sides are continuous in δ, and the condition is never satisfied at $\delta = 4\pi$.

Finally, conjecture an equilibrium where L presents a refuting argument and R a vacuous one. A deviation to a supporting argument is profitable for L whenever:

$$-\pi(1-\lambda)\nu_R 4 - \pi(1-\lambda)(1-\nu_R)(2-\sqrt{\delta})^2 - (1-\pi(1-\lambda))\nu_R\frac{\delta}{\pi} \tag{33}$$
$$+\pi\lambda\nu_R\delta + (1-\pi\lambda)\nu_R 4 + (1-\pi\lambda)(1-\nu_R)(2-\sqrt{\frac{\delta}{\pi}})^2 > 0.$$

The LHS is convex in δ, and never satisfied at $\delta = 0$. Furthermore, it is always satisfied at $\delta = 4\pi$ for a sufficiently low π_j. Similar results hold for a conjecture in which R presents a refuting argument and L a vacuous one.

Thus, there must exist cutoffs $\widehat{\delta} \geq \widetilde{\delta}$ s.t. and $\pi_j^\dagger$ s.t. when $\delta > \widehat{\delta}$ and $\pi_j < \pi_j^\dagger$, the game has a unique equilibrium, where both parties present supporting arguments.

□

Proposition 4.

If $\pi_j > \widetilde{\pi}_j$ and $\lambda_j \geq \overline{\lambda}_j$, then R presents a salience argument and L a vacuous one.

There exist unique $\underline{\lambda}_j < \frac{1}{2} < \overline{\lambda}_j$ and $\widetilde{\pi}_j(\lambda_j)$ s.t. in equilibrium

- *If $\pi_j < \widetilde{\pi}_j$, then both parties present refuting arguments;*
- *If $\pi > \widetilde{\pi}_i$ and $\lambda_j \in (\underline{\lambda}_j, \overline{\lambda}_j)$, then both parties present vacuous arguments;*
- *If $\pi_j > \widetilde{\pi}_j$ and $\leq \underline{\lambda}_j$, then L presents a salience argument and R a vacuous one;*

- *If $\pi_j > \widetilde{\pi}_j$ and $\lambda_j \geq \overline{\lambda}_j$, then R presents a salience argument and L a vacuous one.*

Proof. Here, we allow parties to present any arguments or combination of arguments, including salience ones. Recall that that any action profile where parties present two or more arguments allows for full learning for the voter. This also holds if the arguments are presented by the same party. Further, notice that our assumption on the arbitrarily small cost of presenting non-vacuous arguments implies that informationally redundant arguments cannot be sustained in equilibrium.

These observations, combined with the results of the baseline model, leave the following equilibrium candidates:

1. One party presents a fully informative argument, and the other presents a vacuous argument;
2. One party presents a salience argument and the other a supporting one;
3. One party presents a salience argument and the other a refuting one;
4. One party presents a salience argument and the other a vacuous one;
5. Both parties present refuting arguments;
6. Both parties present vacuous arguments.

First, we can show that an equilibrium in which a party presents a fully informative argument (1) cannot be sustained, as a deviation to a refuting argument is always profitable. To establish a contradiction, conjecture an equilibrium in which R presents a fully informative argument and L presents a vacuous one (an analogous argument applies to the symmetric conjecture).

R's expected payoff in the conjectured equilibrium is

$$-\pi_j\lambda_j 4-(1-\pi_j)4\frac{1}{2}. \tag{34}$$

A deviation to $a_j^R = r$ yields expected payoff

$$-\pi_j\lambda_j 4, \tag{35}$$

and is therefore strictly profitable.

The same logic implies that an equilibrium in which one party presence a salience arguments and the other a supporting one (2) cannot be sustained, as the former has a profitable deviation to presenting a vacuous argument.

Next, conjecture an equilibrium in which one party, say R, presents a salience argument and the other, L, a refuting one (3). From the analysis of the baseline model we know that R has no profitable deviation from the conjectured strategy. Consider instead party L. The party's expected payoff in the conjectured equilibrium is

$$-\pi_j(1-\lambda_j)4-(1-\pi_j)\frac{1}{2}4; \tag{36}$$

A deviation to a supporting argument is payoff irrelevant as it still allows for full learning. Suppose instead L deviates to a vacuous or salience argument. The deviation yields expected payoff

$$-(1-\pi_j)\frac{1}{2}4-\pi_j4(1-\lambda_j)^2, \tag{37}$$

and is therefore always profitable.

Consider instead a conjecture in which one party, say L, presents a salience argument and the other, R, a vacuous one (4). From the previous analysis, R has no profitable deviation. Consider instead L. In the conjectured equilibrium, the expected payoff is

$$-(1-\pi_j)\frac{1}{2}4-\pi_j4(1-\lambda_j)^2. \tag{38}$$

We know from the above analysis that a deviation to a fully informative argument is not profitable. Suppose instead L deviates to a refuting argument

$$-\pi_j(1-\lambda_j)4. \tag{39}$$

The deviation is profitable when π_j iff is sufficiently low.

A deviation to a supporting argument yields expected payoff

$$-(1 - \pi_j \lambda_j)4 \tag{40}$$

and is therefore never profitable.

Finally, a deviation to a vacuous argument yields

$$-4(1 - \lambda_j)^2 \tag{41}$$

and is profitable iff λ_j is sufficiently high.

Combining the above, we have that there exist unique $\widetilde{\pi}_j$ and $\underline{\lambda}_j$ s.t. an equilibrium in which L presents a salience argument and R presents a vacuous one exists iff $\pi_j > \widetilde{\pi}_j^L$ and $\lambda_j < \underline{\lambda}_j$.

A similar argument establishes the result for an equilibrium in which R presents a salience argument and L a vacuous one: there exists a unique $\overline{\lambda}_j$ and $\widetilde{\pi}_j^R$ s.t. the conjectured equilibrium exists iff $\pi_j > \widetilde{\pi}_j^R$ and $\lambda > \overline{\lambda}_j$.

As in the baseline, an equilibrium in which both parties present refuting argument can always be sustained (although it does not always survive our Pareto refinement). A deviation from the conjectured equilibrium to salience or complex arguments is payoff-irrelevant, therefore the availability of these arguments has no effect on the equilibrium analysis.

Finally, conjecture an equilibrium in which both parties present vacuous arguments. Following the previous analysis, a unilateral deviation to a salience argument is profitable for L iff $\lambda_j < \underline{\lambda}_j$. Similarly, a unilateral deviation to a salience argument is profitable for R when λ_j is sufficiently large, $\lambda_j > \overline{\lambda}_j$. Finally, the baseline model establishes that necessary condition to sustain this equilibrium is that π_j is sufficiently large.

To conclude the proof, we must only establish that, when an equilibrium with a salience argument exists, it yields both parties higher expected payoff than the equilibrium in which both parties present a refuting argument. Consider party L. An equilibrium in which only a salience argument is presented yields

$$- \pi_j 4(1-\lambda_j)^2 - (1-\pi_j)\frac{1}{2}4. \tag{42}$$

An equilibrium in which both present a refuting arguments yields

$$-(1-\pi_j)\frac{1}{2}4 - \pi_j 4(1-\lambda_j), \tag{43}$$

which is strictly lower. The same steps can be applied to show that R's expected utility is higher under a salience argument. $\square$