NBS Working paper
8/2024

Inattention, Stability, and Reform Reluctance

Sergei Mikhalishchev and Vladimír Novák

NATIONAL BANK OF SLOVAKIA
EUROSYSTEM

research@nbs.sk

This publication is available on the NBS website
www.nbs.sk/en/publications-issued-by-the-nbs/research-publications

ISSN 2585-9269 (online)

Inattention, Stability, and Reform Reluctance *

Sergei Mikhalishchev† Vladimír Novák ‡

October, 2024

Abstract

We study a model with rationally inattentive voters and investigate how an office-seeking challenger designs a policy platform in the presence of the incumbent who offers a simple stability-providing policy that preserves the status quo. We show that the incumbent's simple policy, while not in the best interest of the electorate, creates negative externalities by encouraging the challenger to propose a more moderate platform, which is sub-optimal for the voter. The model also explains why and when the incumbent benefits from the high uncertainty and intermediate cost of information.

Keywords: Stability, populism, rational inattention, simple policies.
JEL-Codes: H0, P16, D72, D83.

*This project has received funding from the European Research Council under the European Union's Horizon 2020 research and innovation programme (grant agreements No. 101002898). We thank Paola Conconi, Pavel Illinov, Ole Jann, Filip Matějka, Gérard Roland, Ekaterina Travova, Stephane Wolton, Ming Yang, Jan Zápal, and the participants of the PEDD2023 in Münster, RES in Glasgow, NICEP2023 in Nottingham, SAET2023 in Paris, EEA-ESEM in Barcelona, UniCatt Political Economy workshop in Milan, SAEe in Valencia, 2nd Durham Economic Theory Conference, EPSA2022 in Prague, and RUCAM in Nijmegen for their comments and suggestions.

†Durham University Business School, Department of Economics, Mill Hill Lane, Durham, UK, DH1 3LB. Corresponding author. sergei.mikhalishchev@cerge-ei.cz

‡National Bank of Slovakia, Strategic Initiatives Department and Prague University of Economics and Business, Faculty of Business Administration. vladimir.novak@nbs.sk

1. Introduction

Numerous political leaders have built their success on the promise of stability, especially in the wake of information availability and rising policy uncertainty.[1] A notable characteristic of these stability-promising policy platforms is their simplicity and assurances against significant changes or reforms that could destabilize the status quo. This phenomenon is particularly salient in young democracies in Central and Eastern Europe (Wagstyl and Christopher, 2006)[2] as well as for emerging authoritarian leaders who feign democratic principles, often termed as 'spin dictators' (Guriev and Treisman, 2022).[3] The reasons for the success and demand of simple political platforms promising stability have been investigated in several recent papers.[4] However, the literature falls short on the consequences of such policy platforms, their impact on political competition, and the exact role of information availability and uncertainty in supporting these policies.

This paper addresses this gap in the research. We develop a model with rationally inattentive risk-neutral voters and an office-seeking challenger who designs a policy platform in the presence of an incumbent promoting a simple policy,[5] which guarantees the status quo regardless of the state of the world. We show that even when voters and politicians are purely outcome-driven, the incumbent's simple policy creates negative externalities by pushing the office-driven challenger towards reform reluctance, resulting in a platform that is less beneficial for the voters. Furthermore, the model suggests conditions under which it might be advantageous for the incumbent to foster increased uncertainty and support a higher cost of information acquisition for voters. These insights contribute to our understanding of why politicians might endorse the proliferation of fake news and restrict free media in democratic political competition.

We consider the following setup. In our benchmark model, there is an incumbent politician who proposes a policy that brings the same result independently of the state of the

[1] See Davis (2019) for a review and evidence on rising policy uncertainty worldwide.

[2] A representative example offers Slovakia's 2012 elections, where voters elected Robert Fico as a prime minister, and his party SMER ('Direction') had more than 50% of the seats in the parliament, based on an anti-reform ticket offering security and stability.

[3] Examples include authoritarian regimes such as in Russia (Matovski, 2018) or illiberal democracies as, for instance, in Turkey (Reuters, 2015).

[4] One explanation is the reform fatigue, see, e.g., Lora, Panizza and Quispe-Agnoli (2004); Bowen et al. (2016). In addition, there is a well-documented preference of people for simple and certain information structures, see, e.g., Ambuehl and Li (2018); Novák, Matveenko and Ravaioli (2024). See also Levy and Razin (2012) who, in a model of a debate, show that simple policies could be more beneficial when the decision maker has limited attention slots and Bellodi, Morelli and Vannoni (2022); Bellodi et al. (2023) who show that when voters lose trust in representative democracy, politicians strategically supply unconditional policy commitments that are easier to monitor for voters.

[5] We call the policy simple if its entropy is zero. Thus, there is no information needed to be acquired or understood about such a policy.

world. We are agnostic about how such an incumbent came to office in the first place, but once in office, the incumbent sticks to his political platform. The incumbent is challenged by a politician who is purely office-motivated. The challenger can propose a risky policy platform that will benefit the voters more compared to the incumbent's policy in one state of the world and, hence, it will be less beneficial in another state of the world. However, these proposals are constrained by the available political budget. We consider a representative rationally inattentive voter (see, e.g., Sims, 2003). It allows us to focus on the effect of attention, cost of information, and uncertainty on the choice of the policy platform rather than the effect of the individual preferences among voters. Importantly, the previous theoretical work studying the interplay between voters' attention, economic conditions, and political constraints mainly focuses on the situation when the voters are inattentive to the candidates' policies. In contrast, our theory is unique in focusing on the situation when a voter knows the politicians' platforms but is uncertain about the possible outcomes of proposed policies. Specifically, the voter can acquire any information about the future state of the world and thus about the expected benefits of the offered policies, but given that the voter has limited attention, doing so is costly. Therefore, the voter's incentive to pay attention to the state of the world directly depends on the optimal choice of politicians' policy platform, which in turn responds to voters' attention.

First, we characterize the optimal policy platform choice of the challenge. We show that as the probability of a particular state increases and the voters are more certain that a reform would be successful, the challenger shows reform reluctance and proposes a less risky policy platform. It is driven by the voter's inattention and the politicians' capacity to influence it through their platform proposals. Thus, the challenger selects a platform that, on the one hand, reduces the stakes of the choice, discouraging the voter from seeking information, and on the other hand, remains sufficiently attractive compared to the incumbent's platform. Therefore, we provide a novel explanation for why there could be a lack of reform even when it is believed that it is most probably an efficiency-enhancing thing to do.[6]

Second, we study the effect that the cost of information and uncertainty has on the politicians' chances of being elected. The effect of uncertainty is unambiguous, and the incumbent always benefits from higher uncertainty as it decreases the challenger's ability to propose a platform that is better than the incumbent's in expectation. The optimal cost of information depends on the status of the politician. If the incumbent is strong,

[6] There is a large body of literature that studies other mechanisms behind the resistance to reform. For example, uncertainty regarding the distribution of gains and losses Fernandez and Rodrik (1991), pandering Canes-Wrone, Herron and Shotts (2001), trade-offs between welfare in the present and the future Jacobs (2016), or political culture Gratton, Lee and Yousaf (2024).

i.e., he would be chosen if the voters are not able to acquire additional information, then he benefits from the high cost of information. Interestingly, if the incumbent is weak, i.e., he is a priory less popular than the challenger, then he benefits from the intermediate cost of information, which allows some but not full information freedom. Thus, the incumbent may have access to mechanisms that influence either the voters' perception of uncertainty or the costs of information borne by them. Examples of such tools include media censorship and the support for the proliferation of fake news. Therefore, our paper complements and provides an alternative explanation for why autocratic incumbents could allow for some amount of information freedom (Egorov, Guriev and Sonin, 2009; Gratton and Lee, 2023). Moreover, while simple policy is not restricted to a particular political regime, it is often adopted by democrats with autocratic tendencies. The model suggests that once politicians, who have risen to power through democratic means and with the aid of free media, attain a significant degree of political power, they tend to restrict the availability of information during their office. It contributes to the understanding of the mechanisms underlying the phenomenon of democratic backsliding (Waldner and Lust, 2018) and provides insight into the observed behavior of 'spin dictators' (Guriev and Treisman, 2022).

Finally, we analyze voters' welfare and show that the incumbent's simple policy is not in the voter's best interest and could also push the challenger to propose a sub-optimal policy. Thus, if the incumbent, instead of a stability-providing policy, would propose an extreme platform, concentrating resources on the most likely state, then the challenger counters with an opposing extreme platform. This results in the best possible platform choice for voters. Moreover, there is a nuanced interplay between policy platform decisions and voter utility: high uncertainty, while naturally shrinking the expected voter's payoff from the policies, prompts the challenger to propose a riskier policy that better aligns with voter welfare. Therefore, the voter might actually prefer high uncertainty as it aligns the challenger's policy more closely with the voter's ideal platform.

The rest of the paper is organized as follows. In the next section, we review the related literature. Section 3 presents the model. In section 4, we analyzed the model and derive the challenger's optimal policy platform. Section 5 studies the effect of the cost of information and uncertainty on election results. Section 6 explores the voters' welfare. Section 7 concludes.

2. Related literature

This paper contributes to the literature studying how the voter's preferences and attention influence candidates' policy platforms as well as to the broader literature on endogenous information acquisition. The literature on voter behavior has long been interested in examining voter competence that is detrimental to the democracy rooted in electoral accountability. There is significant empirical evidence in favor of voters' irrationality and lack of information (Achen and Bartels, 2017). At the same time, some studies argue that voters are rational, and we need to consider the interplay between voters' behavior, which could be subject to some constraints, and the candidates' incentives and actions (Ashworth and De Mesquita, 2014; Prato and Wolton, 2016; Ashworth, Fowler et al., 2020). We contribute to this literature and provide the theoretical framework where the rational voters with endogenous attention and politicians' platform choice could lead to both informed and uninformed electoral choices conditional on the situation.

Joining a growing literature, our paper focuses on the role of voters' attention in shaping candidates' behavior. Downs (1960) suggests partial ignorance, in which voters know all the actual or potential items in the budget but not all the benefits and costs attached to each item. He suggests that while a well-informed electorate would lead to implementing the welfare-enhancing policy, electoral competition with poorly informed voters about the state of the world can lead office-motivated politicians to pander, offering the policy that a decisive voter expects to be better for her. Similarly, Eguia and Nicolò (2019), finds that a more informed electorate induces candidates to target funds only to specific constituencies, which can reduce aggregate welfare. Nunnari and Zápal (2017) show that when voters focus disproportionately on and, hence, overweight specific attributes of policies, more focused voters and larger and more sensitive to changes on either issue social groups are more influential, and resources are channeled towards divisive issues. Part of this literature, which is closer to our work, considers models with endogenous attention, i.e., when voters look for recommendations.[7] Prato and Wolton (2018) argue that when rationally ignorant voters' demand for reform is high, candidates with unobservable competence engage in the form of populism and propose reformist agendas regardless of their ability to carry them out successfully. Similarly, Trombetta (2020) finds that when attention to the action of the politician is endogenous, inattentive voters may choose to pay too much attention in equilibrium, and it induces too much political pandering. Matějka and Tabellini (2021) show that the selective ignorance of politicians' platforms empowers voters with extreme preferences and small groups, that divisive issues attract the most attention, and that public goods are underfunded. Yuksel (2022) demonstrates that the learning technology, which al-

[7] See also Avoyan and Romagnoli (2023), who propose a novel method for eliciting the attention level solely by observing the decision maker's incentive redistribution choice. Similar to the mechanism in our paper, they show that by reducing the gap between payoffs in different states, the decision-maker, who can directly influence the payoff distribution across states, can affect her incentives to pay attention: the smaller the gap, the less attentive the decision-maker needs to be.

lows the voters to learn more about issues that might be particularly important to them, increases political polarization and welfare loss. Li and Hu (2023) show that the voters' endogenous information acquisition could potentially enhance electoral accountability and selection conditional on the trade-off between incentive power and partisan disagreement generated by the extreme voters' signals. Bandyopadhyay, Chatterjee and Roy (2020) present how profit-seeking media can lead to creation of the extremist political platforms. The presented paper complements and differs from the stated literature in several aspects. First, we analyze how uncertainty affects policy outcomes via politicians' electoral incentives in the presence of an incumbent who proposes a simple anti-reformist policy. Second, we focus on the uncertainty of the state rather than the political platform.[8][9]

Our paper borrows analytical tools from the literature on rational inattention following Sims (2003).[10] Yang and Zeng (2019) study the entrepreneur who designs and offers security to a potential investor in exchange for financing. The authors show that when the project's ex-ante market prospects are good and not very uncertain, the optimal security is debt, which does not induce information acquisition. In contrast, when the project's ex-ante market prospects are obscure, the optimal security is the combination of debt and equity that induces the investor to acquire information.[11] The attention manipulation mechanism behind our results is similar. However, we analyze a situation when there is no given possible realization of payoffs, and the politician, who, in contrast to the entrepreneur, is purely office-driven, allocates the possible benefits for voters across states. Further, on a technical level, this paper uses a quadratic information cost as in (Wei, 2021; Lipnowski, Mathevet and Wei, 2022; Jain and Whitmeyer, 2020) that provides us with the model tractability.[12] However, we also document the same results for the Shannon cost function usually used in the rational inattention literature.

[8]Trombetta (2020) considers the situation when attention to the action and the state of the world are both endogenous and shows that voters may not pay enough attention to the state compared to the ex-ante optimum.

[9]Hu, Li and Segal (2023) study the choice of an attention-maximizing infomediary which aggregates data about candidates with uncertain fit to the office and program, and its effect on the equilibrium choice of politicians and voters. It generates policy polarization even if candidates are office-motivated. In their model, voters are uncertain which candidate is a better fit for office, which could be interpreted as state uncertainty in terms of our model. In Hu, Li and Segal (2023), candidates cannot affect the fit. In contrast, we focus on a politician who directly manipulates possible outcomes.

[10]A detailed review of the rational inattention literature can be found in Maćkowiak, Matějka and Wiederholt (2023).

[11]See also Yang (2020) who studies the situation where the seller maximizes profit by choosing simultaneously both the price and design of security. Facing different securities, the buyer has incentives to acquire information from the different aspects of the fundamental, which in turn affects security design. He finds that debt is uniquely optimal security for the seller.

[12]See also Ely, Frankel and Kamenica (2015); Augenblick and Rabin (2021) who use the quadratic difference between prior and posterior in utility functions.

3. The model

This section describes the game's general setup, the voter's problem, and the challenger's policy platform selection problem. We also introduce the timing of the game and the equilibrium.

3.1. Description of the setup

A representative voter faces a discrete choice problem between two politicians: an incumbent and a challenger. There are two states of the world $\Omega = \{\omega_1, \omega_2\}$, with $\omega \in \Omega$ denoting a generic state. The *incumbent* (henceforth I) provides a known policy platform delivering $S > 0$ utils to the voter in both states of the world. We assume the incumbent committed to this policy before the election and cannot change it.[13] Before the voter's choice is made, the *challenger* (henceforth C) proposes its policy platform, i.e., the state-dependent utility his policy delivers to the voter, given that he is elected.[14] The challenger selects his policy platform $v(C|\omega)$ such that he maximizes the expected probability of being elected. We fully specify the challenger's problem in subsection 3.3. The voter's action $a \in A = \{I, C\}$ is a mapping from states of the world to utilities. We denote as $v(a|\omega) : A \times \Omega \to \mathbb{R}$ the payoff of the voter (in utils) of selecting a politician $a \in A$ in state $\omega \in \Omega$. Hence $v(I|\omega) = S,\ \forall \omega \in \Omega$ and $v(C|\omega)$ is chosen by the challenger for each state $\omega \in \Omega$.

The realization of the state of the world $\omega \in \Omega$ is unknown to politicians and the voter. They share a common prior knowledge about the state realization that is characterized by a prior distribution $\mu \in \Delta(\Omega)$, where $\Delta(\Omega)$ is the set of all probability distributions over states. The prior μ thus reflects the uncertainty over the policy-relevant states. Let $\mu(\omega)$ denote the probability of state ω at prior belief μ. We model the voter to be rationally inattentive (Sims, 2003).

Before making her decision, she can acquire a costly signal $x \in \mathbb{R}$ from a chosen information structure $f(x, \omega) \in \Delta(\mathbb{R} \times \Omega)$, where $\Delta(\mathbb{R} \times \Omega)$ is the set of all probability distributions on $\mathbb{R} \times \Omega$. The more accurate the information, the more costly it is to obtain it. After the voter receives a signal from the selected information structure, she updates her belief using the Bayes rule and chooses an action $a \in A$. Her choice rule is modeled as $\sigma(x) : x \to A$. The voter's objective is to maximize the expected payoff less

[13]This assumption attempts to capture real-world scenarios where, for instance, an incumbent politician has a record to defend and cannot deviate significantly from past policies without risking voter confidence. By committing to a policy that delivers equal utility in both states of the world, the politician demonstrates stability and prudence, maintaining credibility and voter trust in uncertain times.

[14]For example, ω can be interpreted as whether the green transition of the economy is beneficial or not, or whether government support (or ban) of AI implementation is advantageous, etc.

the cost of information.

3.2. The voter's decision problem

Each signal realization is associated with a corresponding posterior belief about the state; hence, an information-processing strategy induces a distribution over posterior beliefs about the state of the world. As was shown by Kamenica and Gentzkow (2011) and Caplin and Dean (2013), instead of specifying the information-processing selection problem, we can equivalently work with the distributions of the posterior beliefs that average out to the prior. Note that, under the optimal strategy, there is a one-to-one mapping between a signal and an action because obtaining multiple signals leading to the same action is wasteful and thus sub-optimal (Matějka and McKay, 2015). Consequently, instead of working with signals, we can directly work with actions, as each posterior belief about the state is associated with a particular selected action.[15]

Thus, the voter chooses information-processing strategy $\mathcal{P} : \Omega \mapsto \Delta(A)$, with $\mathcal{P}(a)$ denoting the unconditional probability of choosing action $a \in A$, where $\mathcal{P}$ is the set of all such state-independent stochastic choice functions, and the corresponding posterior beliefs $\gamma \in \Delta(\Omega)$, with $\gamma(\omega|a)$ denoting the posterior probability of state ω given the choice of either the challenger or the incumbent. We require that all feasible attention strategies satisfy Bayes's rule so that

$$\forall \omega \in \Omega : \sum_{a \in A} \gamma(\omega|a)\mathcal{P}(a) = \mu(\omega). \tag{1}$$

We define a learning cost function κ as

$$\kappa(\gamma) = \sum_{a \in A} \sum_{\omega \in \Omega} \mathcal{P}(a)(\gamma(\omega|a) - \mu(\omega))^2. \tag{2}$$

We use a quadratic information cost function.[16] It falls into the widely used class of posterior separable cost functions; therefore, it is linear in the induced distribution of posterior beliefs.[17] Choosing not to learn is always an option. In this case, the chosen posterior is equal to the prior with probability one.

[15] For details, see Caplin and Dean (2013).

[16] This information cost function is also used in Wei (2021); Lipnowski, Mathevet and Wei (2022); Jain and Whitmeyer (2020) among others. The quadratic cost function provides us with the model traceability, allowing us to obtain a closed-form solution. In Appendix H, we present a numerical example and show that the results with the attention cost modeled as the expected reduction in the entropy (Shannon, 1948; Cover and Thomas, 2012), that is most often considered in the literature, are similar.

[17] For the discussion of the posterior separable cost functions and its decision theoretic foundations see Hébert and Woodford (2021); Morris and Strack (2019); Caplin, Dean and Leahy (2022).

The voter's problem is given by

$$\max_{\mathcal{P}\in\Delta(\mathcal{P})} \left\{ \mathcal{P}(C) \sum_{\omega\in\Omega} v(C|\omega)\gamma(\omega|C) + (1-\mathcal{P}(C))S - \frac{\lambda}{2}\kappa(\gamma) \right\}, \tag{3}$$

subject to (1) and

$$\forall\omega \in \Omega,\ \forall a \in A : 0 \leq \gamma(\omega|a) \leq 1, \tag{4}$$

where $\mathcal{P}(C)$ is the unconditional choice probability of choosing the challenger, $\mathcal{P}(I) = 1 - \mathcal{P}(C)$ is the unconditional choice probability of choosing the incumbent, $\frac{\lambda}{2} > 0$ is a given unit cost of information, and we use $v(I|\omega) = S,\ \forall\omega$. Because $v(I|\omega) = S,\ \forall\omega$, instead of $v(C|\omega)$, we use $v(\omega)$ for the rest of the paper.

3.3. The policy platform selection problem

The incumbent's policy platform is simple and provides the voter with the certainty of receiving $S > 0$ utils irrespective of the state of the world. The challenger is purely office-motivated and wants to be elected independently of the realized state of the world. He takes into account the voter's decision problem and decides how many utils his policy platform will deliver in each state of the world subject to a political budget constraint $\sum_{\omega\in\Omega} v(\omega) \leq B$. The political budget B represents the political power of the challenger.[18]

The challenger selects the policy platform so that he maximizes the probability of being selected by the voter. Consequently, for ease of exposition and without loss of generality, we make the following assumption.[19]

Assumption 1. *The challenger always uses the whole available budget:*

$$\sum_{\omega\in\Omega} v(\omega) = B.$$

Further, we simplify the analysis by superseding the challenger's policy platform choice variable. Thus, the challenger selects $R \in \left[-\frac{B}{2}, \frac{B}{2}\right]$ with $v(\omega_1) = \frac{B}{2} - R$, $v(\omega_2) = \frac{B}{2} + R$. If $R = 0$, then the challenger, as well as the incumbent, proposes a certainty providing platform. Negative or positive values of R correspond to the magnitude of the platform's risk. We refer to a policy $R \in \{-\frac{B}{2}, \frac{B}{2}\}$, i.e., when the challenger puts all of his budget

[18] For instance, it may express to what extent the challenger would be able to reform the economy towards net zero emission goals. Thus, the voter would know how well she would be if she selects the challenger with his policy platform in each state, i.e., if the green transition is good (ω_1) or bad (ω_2).

[19] In Appendix E, we show that in the equilibrium, the probability of the challenger being elected weakly increases in the available budget and, therefore, he would always use the whole budget.

into one state, as *extreme*. The policy platforms are summarized in Table 1.

Politician/State	ω_1	ω_2
Incumbent (I)	S	S
Challenger (C)	$v(\omega_1) = \frac{B}{2} - R$	$v(\omega_2) = \frac{B}{2} + R$

Table 1: Policy platforms of the incumbent and the challenger.

To rule out uninteresting cases, when the challenger or the incumbent can guarantee victory with certainty for any prior belief, we make the following assumption.

Assumption 2. *The maximum amount of utils that the challenger can provide is bounded by available political budget* $B \in (S, 2S)$*:*

$$S < B < 2S. \tag{5}$$

Thus, the challenger's policy platform provides the voter with fewer utils across states than the incumbent's platform.

Therefore, the challenger's problem is given by

$$\max_{R \in (-\frac{B}{2}, \frac{B}{2})} \mathcal{P}(a = C), \tag{6}$$

subject to (5).

3.4. Timing

The timing of the game is as follows:

1. The challenger observes μ and commits to the policy R.
2. The voter observes μ, the policy platforms $\{S, R\}$ of both politicians, and chooses the optimal strategy $\mathcal{P}$.
3. Nature draws the state realization ω and signal according to $\mathcal{P}$ given ω.
4. The voter receives the signal, updates her prior belief to a posterior belief γ, and makes a choice a.
5. Payoffs are realized.

3.5. Equilibrium

We focus on the challenger-preferred subgame perfect equilibria of this game.

Definition 1 (Equilibrium)**.** *An equilibrium of the game is characterized by a pair* $(R^*, \mathcal{P}^*)$ *such that:*

1. $\mathcal{P}^*$ *constitute a solution to* (3) *given* R^**;*
2. R^* *solves the challenger's problem* (6) *given* $\mathcal{P}^*$.

4. Analysis

We proceed by backward induction and first solve the voter's problem, given the challenger's strategy R, and then move back to the challenger's problem.

4.1. The voter's problem

Lemma 1 characterizes the optimal probability of choosing politicians and the posterior beliefs of the voter who takes the policy platform of both politicians as given.

Lemma 1. *The voter's optimal unconditional probabilities* $\mathcal{P}^*(a)$ *of choosing action* $a \in \{I, C\}$ *and corresponding posterior beliefs* $\gamma^*(a|\omega)$ *given state* $\omega \in \{\omega_1, \omega_2\}$ *are*

a) If $\gamma_1 < \mu(\omega_1) < \gamma_2$*,*

$$\begin{aligned}
\gamma^*(\omega_1|C) &= \max\left(0, \min\left(1, \frac{1}{4}\left(2 + \frac{B-2S}{R} - \frac{2R}{\lambda}\right)\right)\right), \\
\gamma^*(\omega_1|I) &= \max\left(0, \min\left(1, \frac{1}{4}\left(2 + \frac{B-2S}{R} + \frac{2R}{\lambda}\right)\right)\right), \\
\gamma^*(\omega_2|C) &= 1 - \gamma^*(\omega_1|C), \\
\gamma^*(\omega_2|I) &= 1 - \gamma^*(\omega_1|I), \\
\mathcal{P}^*(C) &= \frac{\mu(\omega_1) - \gamma^*(\omega_1|I)}{\gamma^*(\omega_1|C) - \gamma^*(\omega_1|I)}, \\
\mathcal{P}^*(I) &= 1 - \mathcal{P}^*(C).
\end{aligned}$$

b) Otherwise,

$$\gamma^*(\omega_1|C) = \gamma^*(\omega_1|I) = \mu(\omega_1),$$
$$\gamma^*(\omega_2|C) = \gamma^*(\omega_2|I) = 1 - \mu(\omega_1),$$
$$\mathcal{P}^*(C) = \begin{cases} 1 & \textit{if } \max\big(\mu(\omega_1), \mu(\omega_2)\big) > \frac{S}{B}, \\ 0 & \textit{if } \max\big(\mu(\omega_1), \mu(\omega_2)\big) \leq \frac{S}{B}, \end{cases}$$
$$\mathcal{P}^*(I) = 1 - \mathcal{P}^*(C).$$

where $\gamma_1 = \min\big(\gamma(\omega_1|I), \gamma(\omega_1|C)\big)$ *and* $\gamma_2 = \max\big(\gamma(\omega_1|I), \gamma(\omega_1|C)\big)$.

Proof. See Appendix A. □

Lemma 1 distinguishes between two possibilities. In case (a), the voter acquires information, learns either fully or partially about the realization of the state of the world, and makes a choice based on this information. In case (b), the voter chooses a politician based on her prior belief without acquiring additional information, because the incentives to acquire information, i.e., the difference between the payoffs from policy platforms of different politicians, are low compared to the cost of acquiring information.

4.2. The challenger's problem

Lemma 2 characterizes the optimal policy platform of the challenger who is ex-ante aware of how the voter decides to acquire information given the policy platform. Figure 1 illustrates Lemma 2 for given parameters.

Lemma 2. *The challenger's optimal policy platform* R^* *is*

a) If $\mu(\omega_1) \in \left[\hat{\mu}_1, \frac{1}{2}\right]$,

$$R^* = \frac{B}{2},$$

b) If $\mu(\omega_1) \in \left(\frac{1}{2}, \hat{\mu}_2\right]$,

$$R^* = -\frac{B}{2},$$

c) If $\mu(\omega_1) \in [\bar{\mu}_1, \hat{\mu}_1] \cup [\hat{\mu}_2, \bar{\mu}_2]$,

$$R^* = \frac{B - 2S}{2\mu(\omega_1) - 1},$$

d) If $\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1]$ and $2S - B > \frac{\lambda}{2}$,

$$R^* : \ R^* \in [T_1, T_2].$$

Proof. We provide proof of proposition and corollaries and specify the formulas for $\bar{\mu}_1$, $\bar{\mu}_2$, $\hat{\mu}_1$, $\hat{\mu}_2$, T_1, T_2 in Appendix B. □

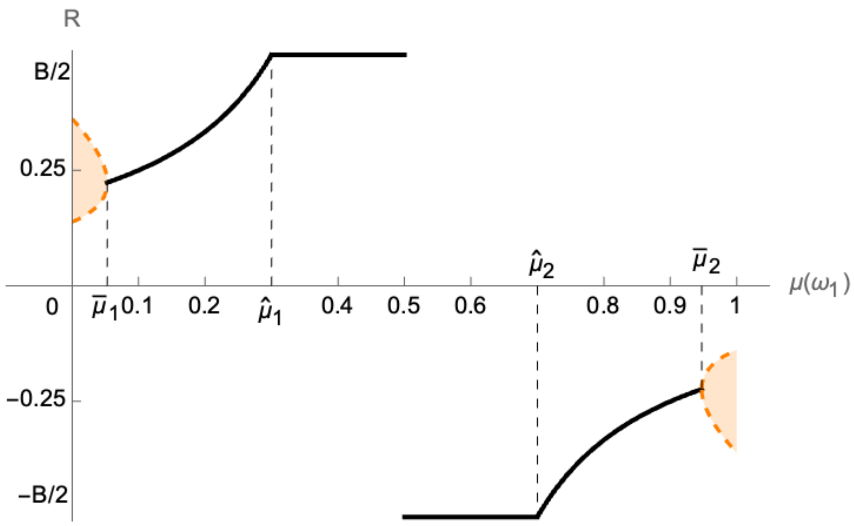

Figure 1: The challenger's optimal policy platform R as functions of $\mu(\omega_1)$ and $\lambda = 0.5$, $S = 0.6$, $B = 1$. The orange area depicts the optimal R that dissuades the voter from acquiring any information.

Lemma 2 distinguishes between four possibilities. Case (d) is possible only if the difference between the total political budgets of the incumbent and the challenger $(2S - B)$ is less or equal to the marginal cost of information $\left(\frac{\lambda}{2}\right)$. Then, for low uncertainty $(\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1])$, the challenger can propose multiple platforms that dissuade the voter from acquiring information and, hence, to blindly choose him (see Corollary 1).

Corollary 1. ***(Non-learning regions)*** *If $2S - B \leq \frac{\lambda}{2}$, then for prior beliefs $\mu(\omega_1) \in [0, \bar{\mu}_1) \cup (\bar{\mu}_2, 1]$, the voter does not acquire information given the challenger's optimal policy platform.*

In cases (a-c) of lemma 2, the challenger cannot provide a policy platform that deters any information acquisition and guarantees victory. Therefore, the voter acquires information, and there is a unique optimal policy platform. Further, in cases (a-b), when the uncertainty is high $(\mu(\omega_1) \in [\hat{\mu}_1, \hat{\mu}_2])$, the challenger maximizes the stakes between states to incentivize the voter to acquire as much information as possible, and therefore, proposes an extreme policy platform. Note that when the uncertainty is the highest $(\mu(\omega) = 0.5)$, then the slightest change in the likelihood of a future situation can switch the challenger's optimal political agenda from one extreme to another (Corollary 2). Hence, the challenger goes in line with the voter's prior belief and switches from promising all his utils in one state to another.

Corollary 2. ***(Switch of extreme platforms)*** *The challenger's optimal policy platform is discontinuous for the uninformative prior belief $\mu(\omega_1)^* = 0.5$. Simultaneously, $R = B/2$ for $\mu(\omega_1)^* + \epsilon$ if $\epsilon \to 0^-$ and $R = -B/2$ if $\epsilon \to 0^+$.*

Proposition 1 states the main result of the paper. Namely, the optimal budget allocation for the state weakly decreases with the probability of the state happening. This means that as it becomes more apparent that a particular state will occur and thus whether reform will be beneficial, the challenger proposes a less risky platform, meaning he splits his budget between the two policies. The voter's inattention drives these results. Thus, without the voter's ability to acquire information, the extreme platform is always optimal, and the challenger (weakly) prefers it. If the voter is inattentive, the challenger chooses a policy platform that, on the one hand, is not very risky, which discourages the voter from acquiring information and, on the other hand, is still attractive enough compared to the incumbent platform.

Proposition 1. *For prior beliefs $\mu(\omega_1) \in [\bar{\mu}_1, 0.5] \cup (0.5, \bar{\mu}_2]$, the optimal policy platform R weakly increases in $\mu(\omega_1)$.*

Proof. We provide proof of proposition in Appendix C. □

5. Optimal cost of information and uncertainty

In this section, we show how the change in the cost of information and uncertainty influence the chances of the politicians being elected. We begin by defining a strong politician, i.e., the politician who is the most favorable candidate ex-ante, and, hence, the voter would choose him with certainty if further information acquisition is not possible.

Definition 2. *The challenger is **strong** and the incumbent is **weak** if*

$$\max\left(\mu(\omega_1), \mu(\omega_2)\right) > \frac{S}{B}.$$

*Otherwise, the challenger is **weak** and the incumbent is **strong**.*

5.1. Effect of the change in the cost of information

A strong incumbent benefits from the high cost of information. The voter always chooses the strong incumbent without information acquisition, and therefore, the higher the cost of information is, the lower the chances of a weak challenger to drive the voter to acquire more information and choose him.

A weak incumbent benefits from the moderate cost of information. If the cost of information is high enough $\left(\lambda > \frac{2R^2}{B-2(S+R)}\right)$, then further increase in the costs decreases the incumbent chances of being elected since he is a priory less preferable candidate. At the same time, if the cost of information is low $\left(\lambda \leq \frac{2R^2}{B-2(S+R)}\right)$, further decrease in the cost of information as well decreases the incumbent chances of victory because the challenger proposes a policy platform offering more than the incumbent in a particular state and, thus, it is beneficial for the challenger if the voter learns which state is more probable.

Proposition 2 formalizes these results. Figures 2- 3 illustrate these results for given parameters.

Proposition 2. *The unconditional probability of the incumbent being elected* $P(I)$*,*

a) if $\lambda > \frac{2R^2}{B-2(S-|R|)}$ *and* $\max\left(\mu(\omega_1), \mu(\omega_2)\right) > \frac{S}{B}$*, weakly decreases in* λ*.*

b) Otherwise, weakly increases in λ*.*

Proof. See Appendix D. □

5.2. Effect of the change in uncertainty

The change in uncertainty has an unambiguous effect on the chances of the incumbent being elected. The challenger has less opportunity to propose a policy platform that is better than the incumbent's platform in expectation. Therefore, rising uncertainty makes the incumbent strong and increases the probability that he is going to be elected. Proposition 3 formalizes this result, and Figure 3 illustrates these results for given parameters.

Proposition 3. *The unconditional probability of the incumbent being elected* $P(I)$*,*

a) for $\mu(\omega_1) \leq 0.5$*, weakly increases in* $\mu(\omega_1)$*,*

b) for $\mu(\omega_1) > 0.5$*, weakly decreases in* $\mu(\omega_1)$*.*

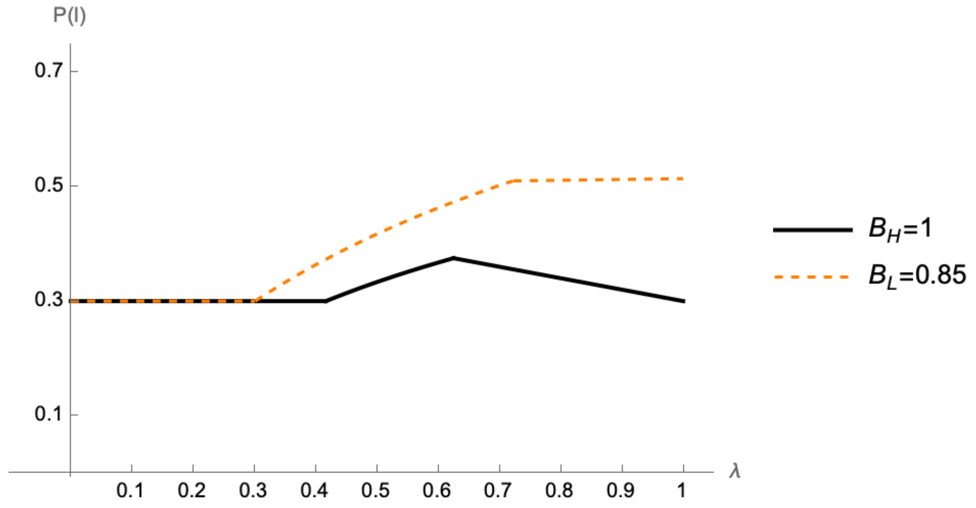

Figure 2: The unconditional probability of the incumbent being selected as a function of a cost of information λ for $B_H = 1,\ B_L = 0.85$ and $\mu(\omega_1) = 0.7$, $S = 0.6$. B_H represents election with the strong and B_L with the weak challenger.

Proof. See Appendix D. □

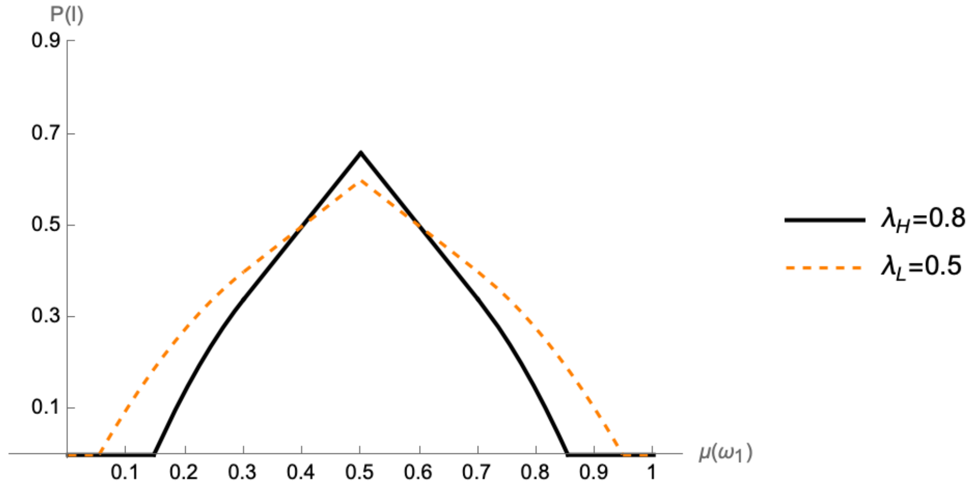

Figure 3: The unconditional probability of the incumbent being selected as a function of $\mu(\omega_1)$ for $\lambda_H = 0.8,\ \lambda_L = 0.5$ and $B = 1$, $S = 0.6$.

6. Implications for the voter's welfare

This section discusses the effect of the incumbent's simple stability providing platform on the voter's welfare. We present the optimal policy platform of the **benevolent** challenger who, in contrast to the office-driven challenger, has the same utility function as a voter. Proposition 4 states that the optimal policy for the voter is an extreme one for any incumbent's policy platform.[20] Therefore, while simple stability offering policy is inferior to the voter, it also creates an additional externality. Namely, it encourages the challenger to propose a more moderate platform, which is sub-optimal for the voter. Note that, the office-driven and the benevolent challengers propose the same extreme platform when the uncertainty is sufficiently high. However, when the voter is more certain about the state of the world, the strategic challenger moves his platform away from an extreme policy. Therefore, the voter may prefer more uncertain times as in such a situation the office-driven challenger promises the same policy platform as the benevolent one. Figure 4 displays the comparison of the voter's utilities with the strategic and benevolent challengers.

Proposition 4. *The benevolent challenger proposes an extreme policy platform:*

a) $R = \frac{B}{2}$ *for* $\mu(\omega_1) \in [0, \tilde{\mu}(\omega_1))$,

b) $R = -\frac{B}{2}$ *for* $\mu(\omega_1) \in [\tilde{\mu}(\omega_1), 1]$.

Proof. We specify the formula for $\tilde{\mu}(\omega_1)$[21] and the proof in Appendix F. □

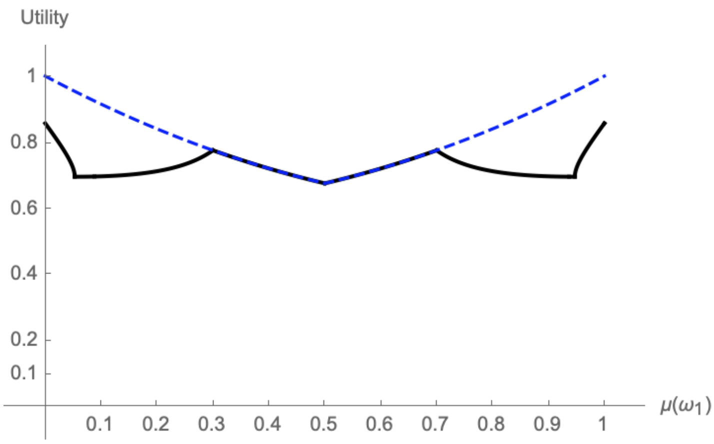

Figure 4: Voter's utility for the optimal policy platform R of office-driven (black line) and benevolent (blue line) challengers as a function of $\mu(\omega_1)$ for $B = 1, S = 0.6, \lambda = 0.5$. For the non-learning region, the most extreme R is used.

In Appendix G, we show that when the incumbent proposes an extreme platform, i.e., he allocates the whole budget to the more probable state, the office-driven challenger also proposes the extreme platform and allocates all his budget into the state, where the incumbent's policy brings no utils to the voter. Therefore, the voter faces the best possible policy platform choice for any parameters.

[20]This result holds for a risk-neutral voter whom we consider to highlight the role of costly information.
[21]Note that $\tilde{\mu}(\omega_1) = 0.5$ when the incumbent offers S in both states.

7. Concluding remarks

In light of the saying: "populism is simple, democracy is complex" (Dahrendorf et al., 2003), while the definition of populism is multidimensional, one of the certain distinctive patterns of populism is simplicity, i.e., there is no place for sophisticated arguments and discussions about trade-offs (Guriev and Papaioannou, 2022). Thus, we can consider the incumbent's policy also as populist, and, therefore, the model could be useful for analyzing the consequences of populism on the challenger's political platform choice and voters' welfare.[22] The model's predictions go against the conventional wisdom that parties always shift their platform toward populism when the populist sentiments are strong, but they could help to explain the mixed empirical evidence on the issue (Haegel and Mayer, 2018). Particularly, we would see the convergence of political platforms between the populist and the challenger when the challenger is relatively more powerful and there is more certainty, while there will be divergence otherwise.

In this paper, we intentionally exclude the political preferences of both voters and politicians, as we aim to demonstrate the role of attention manipulation. We argue that even if all parties are rational and driven solely by outcomes, the mere existence of an incumbent proposing the simple status quo, coupled with costly information, is sufficient to produce an equilibrium that is sub-optimal for voters. For future work, it would be interesting to consider the heterogeneity of voters and analyze how their inattention to states influences redistribution policies. For instance, there is an established result indicating that when voters are inattentive to politicians' platforms, more radical groups tend to pay more attention and, consequently, wield greater influence in elections (see, e.g., Matějka and Tabellini (2021). However, when the outcome of the proposed policy is uncertain, the politician's platform could dissuade voters from these groups from paying attention to the election. Consequently, the results of such a model could differ significantly from those of established models, potentially providing further explanation for controversial empirical observations.

[22]Morelli, Nicolò and Roberti (2021) in different settings analyze a model with a politician who rationally commits to a simple policy to mitigate voters' distrust in government and shows that the committed delegate chooses the strategies associated with populism in the literature.

References

Achen, Christopher, and Larry Bartels. 2017. *Democracy for realists.* Princeton University Press.

Ambuehl, Sandro, and Shengwu Li. 2018. "Belief updating and the demand for information." *Games and Economic Behavior*, 109: 21–39.

Ashworth, Scott, and Ethan Bueno De Mesquita. 2014. "Is voter competence good for voters?: Information, rationality, and democratic performance." *American Political Science Review*, 108(3): 565–587.

Ashworth, Scott, Anthony Fowler, et al. 2020. "Electorates versus Voters." *Journal of Political Institutions and Political Economy*, 1(3): 477–505.

Augenblick, Ned, and Matthew Rabin. 2021. "Belief movement, uncertainty reduction, and rational updating." *The Quarterly Journal of Economics*, 136(2): 933–985.

Avoyan, Ala, and Giorgia Romagnoli. 2023. "Paying for inattention." *Economics Letters*, 226: 111114.

Bandyopadhyay, Siddhartha, Kalyan Chatterjee, and Jaideep Roy. 2020. "Extremist Platforms: Political Consequences of Profit-Seeking Media." *International Economic Review*, 61(3): 1173–1193.

Bellodi, Luca, Massimo Morelli, and Matia Vannoni. 2022. "A Costly Commitment: Populism, Economic Performance, and the Quality of Bureaucracy." *American Journal of Political Science*.

Bellodi, Luca, Massimo Morelli, Antonio Nicolò, and Paolo Roberti. 2023. "The shift to commitment politics and populism: Theory and evidence." *BAFFI CAREFIN Centre Research Paper*, , (204).

Bowen, T Renee, Jackie Chan, Oeindrila Dube, and Nicolas S Lambert. 2016. "Reform fatigue."

Canes-Wrone, Brandice, Michael C Herron, and Kenneth W Shotts. 2001. "Leadership and pandering: A theory of executive policymaking." *American Journal of Political Science*, 532–550.

Caplin, Andrew, and Mark Dean. 2013. "Behavioral implications of rational inattention with shannon entropy." National Bureau of Economic Research.

Caplin, Andrew, Mark Dean, and John Leahy. 2019. "Rational inattention, optimal consideration sets, and stochastic choice." *The Review of Economic Studies*, 86(3): 1061–1094.

Caplin, Andrew, Mark Dean, and John Leahy. 2022. "Rationally inattentive behavior: Characterizing and generalizing Shannon entropy." *Journal of Political Economy*, 130(6): 1676–1715.

Cover, Thomas M, and Joy A Thomas. 2012. *Elements of information theory.* John Wiley & Sons.

Dahrendorf, Ralf, et al. 2003. "Acht Anmerkungen zum Populismus." *Transit*, , (25): 156–163.

Davis, Steven J. 2019. "Rising policy uncertainty." *National Bureau of Economic Research*, No. w26243.

Downs, Anthony. 1960. "Why the government budget is too small in a democracy." *World Politics*, 12(4): 541–563.

Egorov, Georgy, Sergei Guriev, and Konstantin Sonin. 2009. "Why resource-poor dictators allow freer media: A theory and evidence from panel data." *American political science Review*, 103(4): 645–668.

Eguia, Jon X, and Antonio Nicolò. 2019. "Information and targeted spending." *Theoretical Economics*, 14(2): 373–402.

Ely, Jeffrey, Alexander Frankel, and Emir Kamenica. 2015. "Suspense and surprise." *Journal of Political Economy*, 123(1): 215–260.

Fernandez, Raquel, and Dani Rodrik. 1991. "Resistance to reform: Status quo bias in the presence of individual-specific uncertainty." *The American economic review*, 1146–1155.

Gratton, Gabriele, and Barton E Lee. 2023. "Liberty, Security, and Accountability: The Rise and Fall of Illiberal Democracies." *The Review of Economic Studies*, 90(5): 26–74.

Gratton, Gabriele, Barton E Lee, and Hasin Yousaf. 2024. "Bad Democracy Traps."

Guriev, Sergei, and Daniel Treisman. 2022. *Spin dictators: The changing face of tyranny in the 21st century.* Princeton University Press.

Guriev, Sergei, and Elias Papaioannou. 2022. "The political economy of populism." *Journal of Economic Literature*, 60(3): 753–832.

Haegel, Florence, and Nonna Mayer. 2018. "So close, yet so far: The French Front National and Les Républicains (2007–2017)." In *Trumping the Mainstream*. 222–245. Routledge.

Hébert, Benjamin, and Michael Woodford. 2021. "Neighborhood-based information costs." *American Economic Review*, 111(10): 3225–3255.

Hu, Lin, Anqi Li, and Ilya Segal. 2023. "The politics of personalized news aggregation." *Journal of Political Economy Microeconomics*, 1(3): 463–505.

Jacobs, Alan M. 2016. "Policy making for the long term in advanced democracies." *Annual Review of Political Science*, 19(1): 433–454.

Jain, Vasudha, and Mark Whitmeyer. 2020. "Competitive Disclosure of Information to a Rationally Inattentive Consumer."

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

Levy, Gilat, and Ronny Razin. 2012. "When do simple policies win?" *Economic Theory*, 49: 621–637.

Li, Anqi, and Lin Hu. 2023. "Electoral accountability and selection with personalized information aggregation." *Games and Economic Behavior*, 140: 296–315.

Lipnowski, Elliot, Laurent Mathevet, and Dong Wei. 2022. "Optimal attention management: A tractable framework." *Games and Economic Behavior*, 133: 170–180.

Lora, Eduardo A, Ugo Panizza, and Myriam Quispe-Agnoli. 2004. "Reform fatigue: symptoms, reasons, implications."

Maćkowiak, Bartosz, Filip Matějka, and Mirko Wiederholt. 2023. "Rational inattention: A review." *Journal of Economic Literature*, 61(1): 226–273.

Matějka, Filip, and Alisdair McKay. 2015. "Rational inattention to discrete choices: A new foundation for the multinomial logit model." *American Economic Review*, 105(1): 272–298.

Matějka, Filip, and Guido Tabellini. 2021. "Electoral competition with rationally inattentive voters." *Journal of the European Economic Association*, 19(3): 1899–1935.

Matovski, Aleksandar. 2018. "It's the Stability, Stupid! How the Quest to Restore Order After the Soviet Collapse Shaped Russian Popular Opinion." *Comparative Politics*, 50(3): 347–390.

Morelli, Massimo, Antonio Nicolò, and Paolo Roberti. 2021. "A commitment theory of populism."

Morris, Stephen, and Philipp Strack. 2019. "The wald problem and the relation of sequential sampling and ex-ante information costs." *Available at SSRN 2991567*.

Novák, Vladimír, Andrei Matveenko, and Sandro Ravaioli. 2024. "The Status Quo and Belief Polarization of Inattentive Agents: Theory and Experiment." *American Economic Journal: Microeconomics, forthcoming*.

Nunnari, Salvatore, and Jan Zápal. 2017. "A model of focusing in political choice."

Prato, Carlo, and Stephane Wolton. 2016. "The voters' curses: why we need Goldilocks voters." *American Journal of Political Science*, 60(3): 726–737.

Prato, Carlo, and Stephane Wolton. 2018. "Rational ignorance, populism, and reform." *European Journal of Political Economy*, 55: 119–135.

Reuters. 2015. "Turkey's Erdogan says election outcome was a vote for stability." *Reuters*.

Shannon, Claude Elwood. 1948. "A mathematical theory of communication." *Bell system technical journal*, 27(3): 379–423.

Sims, Christopher A. 2003. "Implications of rational inattention." *Journal of Monetary Economics*, 50(3): 665–690.

Trombetta, Federico. 2020. "When the light shines too much: Rational inattention and pandering." *Journal of Public Economic Theory*, 22(1): 98–145.

Wagstyl, Stefan, and Condon Christopher. 2006. "Why reform fatigue has hit the east." *Financial Times*.

Waldner, David, and Ellen Lust. 2018. "Unwelcome change: Coming to terms with democratic backsliding." *Annual Review of Political Science*, 21: 93–113.

Wei, Dong. 2021. "Persuasion under costly learning." *Journal of Mathematical Economics*, 94: 102451.

Yang, Ming. 2020. "Optimality of debt under flexible information acquisition." *The Review of Economic Studies*, 87(1): 487–536.

Yang, Ming, and Yao Zeng. 2019. "Financing entrepreneurial production: security design with flexible information acquisition." *The Review of Financial Studies*, 32(3): 819–863.

Yuksel, Sevgi. 2022. "Specialized learning and political polarization." *International Economic Review*, 63(1): 457–474.

A. Appendix: Proof of Lemma 1

First, we focus on the case when both politicians are selected with a non-zero probability, $\mathcal{P}(a) > 0 \ \forall a \in A$. Because both the cost function and the expected utility are additively separable in the posteriors, we can write the objective function in terms of a *net utility*

$$\sum_{a\in A}\mathcal{P}(a)\sum_{\omega\in\Omega}v(a|\omega)\gamma(\omega|a) - \frac{\lambda}{2}\sum_{a\in A}\sum_{\omega\in\Omega}\mathcal{P}(a)(\gamma(\omega|a)-\mu(\omega))^2 = \sum_{a\in A}\mathcal{P}(a)N(\gamma(a)),$$

where $v(a|\omega)$ corresponds to utils, which voter receive from choosing politician a given state ω, and the net utility $N(\gamma(a))$ is

$$N(\gamma(a)) = \sum_{\omega\in\Omega}\gamma(\omega|a)v(a|\omega) - \frac{\lambda}{2}\sum_{\omega\in\Omega}\left(\gamma(\omega|a)-\mu(\omega)\right)^2.$$

Thus, instead of maximizing the expected utility minus the cost of information for each action and corresponding posterior belief pair, we can characterize the voter's problem as a maximization of the weighted average of act-specific net utilities. As Caplin, Dean and Leahy (2019) show, a necessary condition for optimality is that the slope of the net utility function is the same for each chosen action at its associated posterior. We denote the posterior beliefs for the action a as $\gamma(\omega_1|a)$ and $\gamma(\omega_2|a) = 1-\gamma(\omega_1|a)$. The slope of the net utility function is

$$\frac{\partial N(\gamma(a))}{\partial\gamma(\omega_1|a)} = v(a|\omega_1) - v(a|\omega_2) - 2\lambda(\gamma(\omega_1|a)-\mu(\omega_1)),$$

and the same slope condition gives

$$\gamma(\omega_1|I) - \gamma(\omega_1|C) = \frac{v(I|\omega_1)-v(I|\omega_2)-v(C|\omega_1)+v(C|\omega_2)}{2\lambda} = \frac{R}{\lambda}. \tag{7}$$

Further, when both posterior beliefs $\gamma(\omega_1|a) \ \forall a \in A$ lie between 0 and 1, we can apply the concavification method Kamenica and Gentzkow (2011); Caplin and Dean (2013) to find the posterior beliefs. Specifically, when the action space is binary, the binary attention strategy is incentive compatible, if and only if the affine function connecting $(\gamma(\omega_1|I), N(\gamma(I)))$ and $(\gamma(\omega_1|C), N(\gamma(I)))$ lies above the $N(\gamma(\cdot))$ on an interval $[\gamma(\omega_1|I), \gamma(\omega_1|C)]$. For a fixed $\gamma(\omega_1|I)$, the smallest posterior $\gamma(\omega_1|C)$ satisfying this property holds when the affine function is tangent to $N(\gamma(\cdot))$ at $\gamma(\omega_1|I)$. Note that lower $\gamma(\omega_1|C)$ decreases the instrumental value of the information, making it sub-optimal. Thus, the tangency condition of concavification requires that

$$\frac{\partial N'(\gamma(I))}{\partial \gamma(\omega_1|I)} = \frac{N(\gamma(C)) - N(\gamma(I))}{\gamma(\omega_1|C) - \gamma(\omega_1|I)}.$$

After substituting the previous results, we obtain the optimal posteriors that are between 0 and 1 are

$$\gamma(\omega_1|C) = \frac{1}{4}\left(2 + \frac{B-2S}{R} - \frac{2R}{\lambda}\right),$$
$$\gamma(\omega_1|I) = \frac{1}{4}\left(2 + \frac{B-2S}{R} + \frac{2R}{\lambda}\right).$$

The previous equations characterize the optimal interior posteriors. Otherwise, the posteriors are in the corner solutions. Thus, the full characterization of the posteriors is given by

$$\gamma(\omega_1|C) = \max\left(0, \min\left(1, \frac{1}{4}\left(2 + \frac{B-2S}{R} - \frac{2R}{\lambda}\right)\right)\right),$$
$$\gamma(\omega_1|I) = \max\left(0, \min\left(1, \frac{1}{4}\left(2 + \frac{B-2S}{R} + \frac{2R}{\lambda}\right)\right)\right).$$

So far, we focused only on the cases when the voter acquires information, i.e., if the prior belief $\mu(\omega_1)$ is between the posterior beliefs, $\min\big(\gamma(\omega_1|I), \gamma(\omega_1|C)\big) < \mu(\omega_1) < \max\big(\gamma(\omega_1|I), \gamma(\omega_1|C)\big)$. When the voter does not acquire any information, the posterior belief equals the prior belief.

Optimal unconditional probabilities $P^*(a)$, $\forall a \in A$ is obtained by using condition (1), i.e., $\forall \omega \in \Omega : \sum_{a\in A} \gamma(\omega|a)\mathcal{P}(a) = \mu(\omega)$.

B. Appendix: Proof of Lemma 2

First, we focus on the case when both politicians are selected with a non-zero probability, $\mathcal{P}(a) > 0, \ \forall a \in A$. The challenger C selects his policy platform such that he maximizes the unconditional probability of being selected. Applying condition (1), i.e., $\forall \omega \in \Omega : \sum_{a \in A} \gamma(\omega|a)\mathcal{P}(a) = \mu(\omega)$, we obtain that the challenger's objective function is:

$$\max_{R \in \left[-\frac{B}{2}, \frac{B}{2}\right]} \frac{\mu(\omega_1) - \gamma(\omega_1|I)}{\gamma(\omega_1|C) - \gamma(\omega_1|I)},$$

where the posterior belief $\gamma(\omega|a)$ is a function of R. The first order condition of the objective function equals zero for

$$R = \frac{B - 2S}{2\mu(\omega_1) - 1}. \tag{8}$$

Given condition (5), i.e., $B < 2S$, the nominator of the formula (8) is always negative. The sign of the optimal R is thus determined by the voter's prior belief. Specifically, if $\mu(\omega_1) > \frac{1}{2}$ then the optimal $R < 0$; if $\mu(\omega_1) < \frac{1}{2}$ then the optimal $R > 0$; and if $\mu(\omega_1) = \frac{1}{2}$ there is a discontinuity that we will investigate separately. Note also that all three candidates for the optimal $R = \left\{-\frac{B}{2}, \frac{B}{2}, \frac{B-2S}{2\mu(\omega_1)-1}\right\}$ are independent of λ. As we will show later, λ influences the parameter space in which the voter decides not to acquire any information.

As we have shown, the objective attains maximum at $R = \frac{B-2S}{2\mu(\omega_1)-1}$ unless it achieves the boundary. Thus, we can characterize when $\frac{B-2S}{2\mu(\omega_1)-1} \geq \frac{B}{2}$ and when $\frac{B-2S}{2\mu(\omega_1)-1} \leq -\frac{B}{2}$. It is straightforward to obtain that if $\mu(\omega_1) < \frac{1}{2}$ and $S \geq \frac{B(3-2\mu(\omega_1))}{4}$ then $\frac{B-2S}{2\mu(\omega_1)-1} \geq \frac{B}{2}$. Analogously, if $\mu(\omega_1) > \frac{1}{2}$ and $S \geq \frac{B(1+2\mu(\omega_1))}{4}$ then $\frac{B-2S}{2\mu(\omega_1)-1} \leq -\frac{B}{2}$.

To sum up, conditional on the voter acquiring information, the optimal policy platform of the challenger is $R = \frac{B-2S}{2\mu(\omega_1)-1}$ if $\mu(\omega_1) \leq \hat{\mu}_1 = \frac{3}{2} - \frac{2S}{B} \vee \mu(\omega_1) \geq \hat{\mu}_2 = \frac{2S}{B} - \frac{1}{2}$; otherwise, $R = \frac{B}{2}$ if $\hat{\mu}_1 < \mu(\omega_1) \leq \frac{1}{2}$ and $R = -\frac{B}{2}$ if $\frac{1}{2} < \mu(\omega_1) \leq \hat{\mu}_2$.

Second, we consider when the challenger can offer such a policy platform that he is selected with the unconditional probability 1. It happens when the voter does not acquire any information and, hence, her posterior belief equals the prior belief and

$P(C) = \{0, 1\}$. We focus on the case when $P(C) = 1$.

According to Lemma 1, the voter does not acquire information if i) $\mu(\omega_1) < \gamma_1^*$ or ii) $\gamma_2^* < \mu(\omega_1)$, where

$$\gamma_1^* = \min(\gamma(\omega_1|I), \gamma(\omega_1|C)),$$
$$\gamma_2^* = \max(\gamma(\omega_1|I), \gamma(\omega_1|C)).$$

By comparing the posteriors we get that $\gamma(\omega_1|C) < \gamma(\omega_1|I)$ if $R > 0$ and $\gamma(\omega_1|C) > \gamma(\omega_1|I)$ if $R < 0$. We know that $R > 0$ for $\mu(\omega_1) < \frac{1}{2}$. Without loss of generality, we focus on case i) and, hence, we can consider $\mu(\omega_1) < \gamma(\omega_1|C)$. Therefore, the voter does not acquire information if her prior belief is

$$\mu(\omega_1) \leq \frac{(B - 2S)}{4R} + \frac{(\lambda - R)}{2\lambda}.$$

The right-hand side of this condition depends on the voter's policy platform R. By rearranging we get that in the non-learning region the optimal policy R has to satisfy

$$2R\left[R + \lambda(2\mu(\omega_1) - 1)\right] \leq (B - 2S)\lambda.$$

There exist multiple optimal policy platforms R satisfying this condition. We solve the quadratic equation given by the previous condition. We obtain that all policy platforms R that satisfy $R \in [T_1, T_2]$ are optimal and lead the voter not to acquire any information, where

$$T_1 = \max\left(-\frac{B}{2}, \frac{1}{4}\left(2\lambda - 4\lambda\mu(\omega_1) - \sqrt{(2\lambda - 4\lambda\mu(\omega_1))^2 + 8\lambda(B - 2S)}\right)\right),$$
$$T_2 = \min\left(\frac{B}{2}, \frac{1}{4}\left(2\lambda - 4\lambda\mu(\omega_1) + \sqrt{(2\lambda - 4\lambda\mu(\omega_1))^2 + 8\lambda(B - 2S)}\right)\right).$$

We can now identify the set of prior beliefs for which such R exists. By solving $T1 = T2 = \frac{B-2S}{2\mu(\omega_1)-1}$ we can find the priors for which the non-learning region exists. Therefore, the voter does not acquire information for $\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1]$, where

$$\bar{\mu}_1 = \max\left\{0, \frac{1}{2} + \frac{\sqrt{2}\sqrt{6B\lambda S(B-2S) + \lambda(8S^3 - B^3)}}{2\lambda(B-2S)}\right\},$$
$$\bar{\mu}_2 = \min\left\{1, \frac{1}{2} - \frac{\sqrt{2}\sqrt{6B\lambda S(B-2S) + \lambda(8S^3 - B^3)}}{2\lambda(B-2S)}\right\}.$$

Note that $\bar{\mu}_1 = 0$ and $\bar{\mu}_2 = 1$ if $2S - B > \frac{\lambda}{2}$.

C. Appendix: Proof of Proposition 1

We know that when the voter acquires information, i.e., $\mu(\omega_1) \in [\bar{\mu}_1, 0.5] \cup (0.5, \bar{\mu}_2)$, the optimal policy is either on the boundary and independent of $\mu(\omega_1)$, $R \in \{\frac{B}{2}, -\frac{B}{2}\}$, or has an interior solution, $R = \frac{B-2S}{2\mu(\omega_1)-1}$. The first derivative of the interior solution for R is

$$\frac{\partial}{\partial\mu(\omega_1)}\frac{B-2S}{2\mu(\omega_1)-1} = -\frac{2(B-2S)}{(1-2\mu(\omega_1))^2} > 0.$$

Therefore, the optimal policy platform R weakly increases in $\mu(\omega_1)$.

D. Appendix: Proof of the results in Section 5

In order to keep the same variables throughout the appendix, we do proofs using the unconditional probability of the challenger being elected. Then, the propositions are obtained using $P(I) = 1 - P(C)$.

D.1. Proof of Proposition 2

We begin by noting that only the strong challenger can propose a platform that dissuades the voter from acquiring any information. Moreover, the weak challenger always proposes an extreme platform. It is so, since for the weak challenger the following holds

- If $\mu(\omega_1) \leq \frac{1}{2}$
$$\bar{\mu}_{A1} < \hat{\mu}_1 < 1 - \frac{S}{B} \leq \mu(\omega_1);$$

- If $\frac{1}{2} < \mu(\omega_1)$

$$\frac{1}{2} < \mu(\omega_1) \leq \frac{S}{B} \leq \hat{\mu}_2 < \bar{\mu}_{A2}.$$

Now we consider several cases based on the voter's choice of the information strategy.

First, Lemma 3 shows that the cost of information does not affect the choice of the interior policy platform (i.e., R for $\mu(\omega_1) \in [\bar{\mu}_1, \bar{\mu}_2]$). However, the range of prior beliefs for which the strong challenger will be chosen without acquiring information ($\mathcal{P}(C) = 1$) increases in λ. Figure 5 illustrates these results for given parameters. The intervals $[0, \bar{\mu}_{A1}] \cup [\bar{\mu}_{A2}, 1]$ and $[0, \bar{\mu}_{B1}] \cup [\bar{\mu}_{B2}, 1]$ indicate the range of prior beliefs $\mu(\omega_1)$ for which the challenger dissuades the voter from acquiring any information for $\lambda_A = 0.8$ and $\lambda_B = 0.5$.

Lemma 3. ***(Effect of the change in the cost of information)*** *The range of prior beliefs* $\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1]$ *for which the challenger achieves* $\mathcal{P}(C) = 1$ *increases in* λ.

Proof. Lemma 2 shows, that when the voter does not acquire information, the challenger achieves $\mathcal{P}(C) = 1$ by the optimally selected policy platform for all prior beliefs $\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1]$. A simple derivation reveals that,

$$\frac{\partial \bar{\mu}_1}{\partial \lambda} = -\frac{(B-2S)^5}{2\sqrt{2}\left(-\lambda(B-2S)^3\right)^{3/2}} > 0,$$

and

$$\frac{\partial \bar{\mu}_2}{\partial \lambda} = \frac{(B-2S)^5}{2\sqrt{2}\left(-\lambda(B-2S)^3\right)^{3/2}} < 0.$$

Therefore, because $\bar{\mu}_1$ increases and $\bar{\mu}_2$ decreases in λ, the range of prior beliefs for which $\mathcal{P}(C) = 1$ can be achieved increases in λ. □

Second, when the voter chooses two imperfect signals, $0 < \{\gamma(\omega|I), \gamma(\omega|C)\} < 1$, then the strong challenger can provide both interior and extreme policy platforms, while the weak challenger provides only an extreme policy platform. Therefore, when either the weak or the strong challenger provides an extreme policy platform, we have

$$\frac{\partial \mathcal{P}(C)}{\partial \lambda} = \frac{2B\mu(\omega_1) - 2S}{B^2}. \tag{9}$$

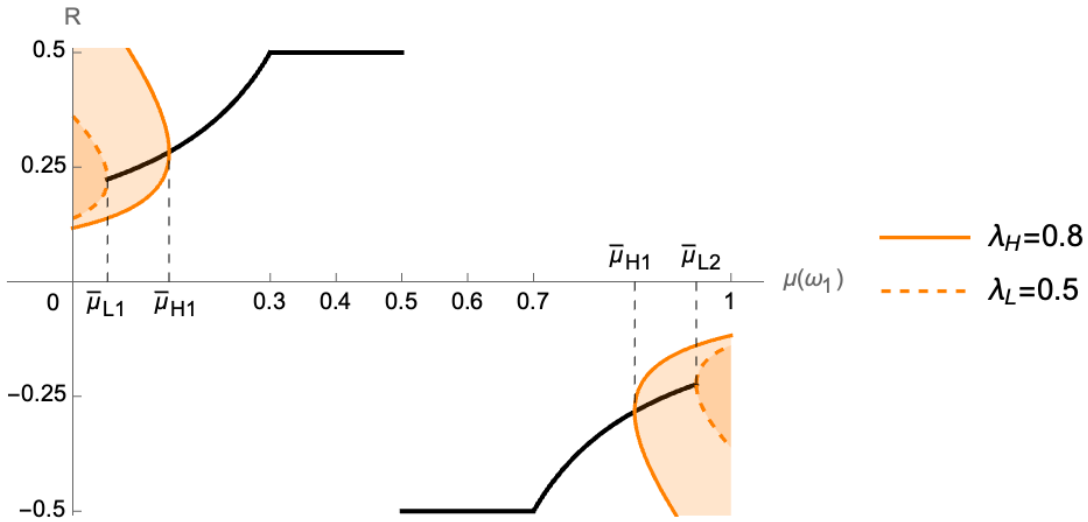

Figure 5: The challenger's optimal policy platform as a function of $\mu(\omega_1)$ for $\lambda_H = 0.8$, $\lambda_L = 0.5$ and $B = 1$, $S = 0.6$. The orange area depicts the optimal R that dissuades the voter from acquiring any information.

And when the strong challenger provides an interior policy platform, we have

$$\frac{\partial \mathcal{P}(C)}{\partial \lambda} = \frac{(0.5 - \mu(\omega_1))^2}{2S - B} > 0. \tag{10}$$

Therefore, if the challenger is strong ($\max(\mu(\omega_1), \mu(\omega_1)) > \frac{S}{B}$), then the derivatives (9)-(10) are strictly positive ($\frac{\partial \mathcal{P}(C)}{\partial \lambda} > 0$). If the challenger is weak ($\max(\mu(\omega_1), \mu(\omega_1)) \leq \frac{S}{B}$), then the derivative (9) is strictly negative ($\frac{\partial \mathcal{P}(C)}{\partial \lambda} < 0$).

Third, we consider the situation when the voter acquires only one state-revealing signal. By using Lemma 1, this happens if

$$\frac{2R^2}{2(S + |R|) - B} < \lambda < \frac{2R^2}{B - 2(S - |R|)}.$$

Thus, for $\mu(\omega_1) > 0.5$ her optimal posteriors are $\gamma(\omega_1|C) = 1$ and $0 < \gamma(\omega_1|I) < 1$.[23] Then, we obtain that

$$\frac{\partial \mathcal{P}(C)}{\partial \lambda} = \frac{8(1 - \mu(\omega_1))R^3}{(B\lambda + 2R^2 + 2\lambda(R - S))^2}.$$

Lemma 2 shows that for $\mu(\omega_1) \in (0.5, 1]$ the challenger's optimal policy platform $R < 0$.

[23] It is so, because if $\mu(\omega_1) > 0.5$ then $R < 0$, and therefore $\gamma(\omega_1|C) > \gamma(\omega_1|I) > 0$. Similarly, if $\mu(\omega_1) \leq 0.5$ then $R \geq 0$, and therefore $\gamma(\omega_1|C) < \gamma(\omega_1|I) < 1$.

Therefore, the derivative is strictly negative $\frac{\partial \mathcal{P}(C)}{\partial \lambda} < 0$. Similarly, for $\mu(\omega_1) < 0.5$ the voter's optimal posteriors are $\gamma(\omega_1|C) = 0$ and $0 < \gamma(\omega_1|I) < 1$. Then, we obtain that

$$\frac{\partial \mathcal{P}(C)}{\partial \lambda} = -\frac{8(\mu(\omega_1))R^3}{(B\lambda + 2R^2 + 2\lambda(R-S))^2}.$$

Lemma 2 shows that for $\mu(\omega_1) \in [0, 0.5]$ the challenger's optimal policy platform $R > 0$. Therefore, the derivative is also strictly negative $\frac{\partial \mathcal{P}(C)}{\partial \lambda} < 0$.

Finally, if $\lambda < \frac{2R^2}{2(S+|R|)-B}$, then the voter acquires two fully state-revealing signals. Then, the probability of the challenger being selected is constant and equals $\max(\mu(\omega_1), \mu(\omega_2))$.

D.2. Proof of Proposition 3

We say that the uncertainty increases if $\mu(\omega_1)$ increases for $\mu(\omega_1) < 0.5$ and if $\mu(\omega_1)$ decreases for $\mu(\omega_1) > 0.5$.

First, note that by Lemma 2, if $B > \frac{-\lambda+4S}{2}$, then the challenger dissuades the voter from acquiring any information and achieves $\mathcal{P}(C) = 1$ by the optimally selected policy platform for all prior beliefs $\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1]$. Therefore, when uncertainty is low, the challenger is chosen blindly.

Second, when the voter chooses two imperfect signals, $0 < \{\gamma(\omega|I), \gamma(\omega|C)\} < 1$, there are several cases to consider.

i) The challenger proposes interior policy platform, $-\frac{B}{2} < R < \frac{B}{2}$. Then, we obtain

$$\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} = \frac{\lambda(1 - 2\mu(\omega_1))}{B - 2S}.$$

Denominator is negative by condition (5), i.e., $B < 2S$, therefore for $\mu(\omega_1) < 0.5$ this derivative is strictly negative $\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} < 0$, and for $\mu(\omega_1) > 0.5$ it is strictly positive $\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} > 0$.

ii) The challenger proposes extreme policy platform, $R = \frac{B}{2}$ for $\mu(\omega_1) \in [\hat{\mu}_1, 0.5]$. Then, we have $\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} = -\frac{2\lambda}{B} < 0$. Similarly, for $\mu(\omega_1) \in (0.5, \hat{\mu}_2]$ the challenger proposes $R = -\frac{B}{2}$ and we obtain that $\mu(\omega_1) = \frac{2\lambda}{B} > 0$.

Third, when the voter receives one state-revealing signal, then for $\mu(\omega_1) < 0.5$ the voter's optimal posteriors are $\gamma(\omega_1|C) = 0$ and $0 < \gamma(\omega_1|I) < 1$. Then, we obtain that

i) if $\mu(\omega_1) < \hat{\mu}_1$

$$\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} = -\frac{4\lambda(B(-2+8\mu(\omega_1)) + (1-2\mu(\omega_1))^2\lambda + 4(1-4\mu(\omega_1))S)}{(2B + (-1+4\mu(\omega_1)^2)\lambda - 4S)^2} < 0.$$

ii) if $\mu(\omega_1) \in [\hat{\mu}_1, 0.5]$

$$\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} = -\frac{4B\lambda}{B^2 + 4B\lambda - 4\lambda S} < 0.$$

Similarly, for $\mu(\omega_1) > 0.5$ the voter's optimal posteriors are $\gamma(\omega_1|C) = 1$ and $0 < \{\gamma(\omega_1|I)\} < 1$. Then, we obtain that

i) if $\mu(\omega_1) > \hat{\mu}_2$

$$\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} = \frac{4\lambda(B(6-8\mu(\omega_1)) + (1-2\mu(\omega_1))^2\lambda + 4(-3+4\mu(\omega_1))S)}{(2B + (3-8\mu(\omega_1) + 4\mu(\omega_1)^2)\lambda - 4S)^2} > 0.$$

ii) if $\mu(\omega_1) \in (0.5, \hat{\mu}_2]$

$$\frac{\partial \mathcal{P}(C)}{\partial \mu(\omega_1)} = \frac{4B\lambda}{B^2 + 4B\lambda - 4\lambda S} > 0.$$

Finally, when the voter acquires two fully state-revealing signals, then, the probability of the challenger being selected is constant and equals $\max(\mu(\omega_1), \mu(\omega_2))$. Therefore, the challenger always benefits from low uncertainty.

E. Appendix: Effect of political budget

We consider several cases based on the voter's choice of the information strategy.

First, Lemma 4 shows that the challenger with a low political budget proposes an extreme platform even for relatively certain situations. Moreover, he can not propose a policy that dissuades the voter from acquiring information. Figure 6 illustrates these results for given parameters. The intervals $[\hat{\mu}_{A1}, \hat{\mu}_{A2}]$ and $[\hat{\mu}_{B1}, \hat{\mu}_{B2}]$ indicate the range of prior beliefs $\mu(\omega_1)$ for which the challenger selects an extreme policy platform when $B_A = 1$ and $B_B = 0.85$. For these particular parameters, the condition $2S - B \leq \frac{\lambda}{2}$ no longer holds. Consequently, for $B_B = 0.85$ the equilibrium is unique for all $\mu(\omega_1)$, so the challenger cannot dissuade the voter from acquiring information.

Lemma 4. ***(Effect of the change in political budget)*** *The reduction in the budget B*

- *increases the range of prior beliefs $\mu(\omega_1)$ for which the challenger selects an extreme policy platform $R \in \{-\frac{B}{2}, \frac{B}{2}\}$;*
- *decreases the range of prior beliefs $\mu(\omega_1)$ for which the challenger dissuades the voter from acquiring any information.*

Proof. First, the challenger's optimal policy platform is $R = \frac{B}{2}$ if the set of prior beliefs is $\mu(\omega_1) \in [\hat{\mu}_1, 0.5]$, and $R = -\frac{B}{2}$ if $\mu(\omega_1) \in (0.5, \hat{\mu}_2]$. By taking derivative of $\hat{\mu}_1$ and $\hat{\mu}_2$ w.r.t. B, we obtain that

$$\frac{\partial \hat{\mu}_1}{\partial B} = \frac{2S}{B^2} > 0,$$
$$\frac{\partial \hat{\mu}_2}{\partial B} = -\frac{2S}{B^2} < 0.$$

Therefore, when B decreases, the set of prior beliefs for which the optimal policy platform is on the boundary, i.e., $R \in \{-\frac{B}{2}, \frac{B}{2}\}$, gets larger.

Second, the voter does not acquire information and chooses the challenger with certainty for $\mu(\omega_1) \in [0, \bar{\mu}_1] \cup [\bar{\mu}_2, 1]$. By taking derivative of $\bar{\mu}_1$ and $\bar{\mu}_2$ w.r.t. B, we obtain that

$$\frac{\partial \bar{\mu}_1}{\partial B} = \frac{2S - B}{2\sqrt{2}\sqrt{-(B-2S)^3\lambda}} > 0,$$
$$\frac{\partial \bar{\mu}_2}{\partial B} = \frac{B - 2S}{2\sqrt{2}\sqrt{-(B-2S)^3\lambda}} < 0.$$

Note that $\bar{\mu}_1 = 0$ and $\bar{\mu}_2 = 1$ if $2S - B > \frac{\lambda}{2}$. Therefore, when B decreases, the set of prior beliefs for which the voter does not acquire information gets smaller. □

Second, when the voter chooses two imperfect signals, $0 < \{\gamma(\omega|I), \gamma(\omega|C)\} < 1$, we

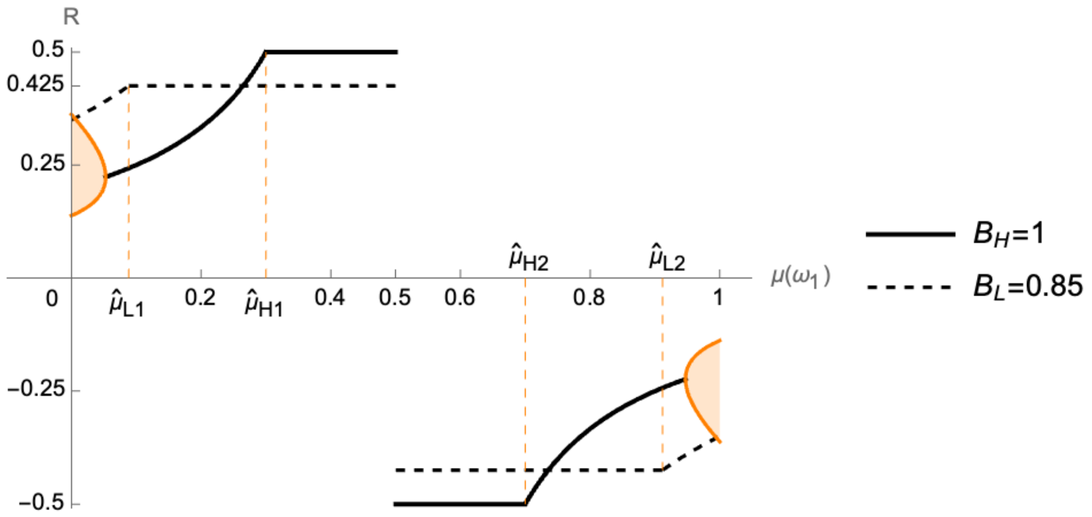

Figure 6: The challenger's optimal policy platform as a function of $\mu(\omega_1)$ for $B_H = 1$, $B_L = 0.85$ and $\lambda = 0.5$, $S = 0.6$. The orange area depicts optimal R that for $B_H = 1$ dissuades the voter from acquiring any information, whereas for $B_L = 0.85$ the voter always acquires information.

obtain that

$$\frac{\partial \mathcal{P}(C)}{\partial B} = \frac{\lambda}{4R^2} > 0.$$

Third, when the voter receives one state-revealing signal, for $\mu(\omega_1) < 0.5$ the voter's optimal posteriors are $\gamma(\omega_1|C) = 0$ and $0 < \gamma(\omega_1|I) < 1$. Then, we obtain that

$$\frac{\partial \mathcal{P}(C)}{\partial B} = \frac{4\mu(\omega_1)\lambda^2 R}{(B\lambda + 2\lambda R + 2R^2 - 2\lambda S)^2}$$

Lemma 2 shows that for $\mu(\omega_1) \in (0.5, 1]$ the challenger's optimal policy platform $R < 0$. Therefore, the derivative is strictly positive $\frac{\partial \mathcal{P}(C)}{\partial B} > 0$.

Similarly, for $\mu(\omega_1) < 0.5$ the voter's optimal posteriors are $\gamma(\omega_1|C) = 0$ and $0 < \gamma(\omega_1|I) < 1$. Then, we obtain that

$$\frac{\partial \mathcal{P}(C)}{\partial B} = \frac{4(\mu(\omega_1) - 1)\lambda^2 R}{(B\lambda - 2\lambda R + 2R^2 - 2\lambda S)^2}.$$

Lemma 2 shows that for $\mu(\omega_1) \in [0, 0.5]$ the challenger's optimal policy platform $R > 0$. Therefore, the derivative is also strictly positive $\frac{\partial \mathcal{P}(C)}{\partial B} > 0$.

Finally, when the voter acquires two fully state-revealing signals, then, the probability of the challenger being selected is constant and equals $\max(\mu(\omega_1), \mu(\omega_2))$. Therefore, the challenger (weakly) benefits from a higher political budget and, consequently, would always use all the available budget.

F. Appendix: Proof of Proposition 4

We assume that the incumbent proposes the policy platform S_1 in the state ω_1 and $S_2 = 2S - S_1$ in the state ω_2, where $0 \leq S_1 \leq 2S$. See Table 2.

Politician/State	ω_1	ω_2
Incumbent (I)	S_1	$S_2 = 2S - S_1$
Challenger (C)	$v(\omega_1) = \frac{B}{2} - R$	$v(\omega_2) = \frac{B}{2} + R$

Table 2: Policy platforms of the incumbent and the challenger.

We proceed analogously as in Appendix A and B and obtain that the difference of posterior beliefs is

$$\gamma(\omega_1|I) - \gamma(\omega_1|C) = \frac{S_1 - S_2 + 2R}{2\lambda}.$$

Using the tangency condition of concavification we obtain the following optimal posteriors:

$$\gamma(\omega_1|C) = \max\left(0, \min\left(1, \frac{1}{4}\left(2 + \frac{2(S - S_1 - R)}{\lambda} + \frac{B - 2S}{S_1 - S + R}\right)\right)\right),$$
$$\gamma(\omega_1|I) = \max\left(0, \min\left(1, \frac{1}{4}\left(2 + \frac{B - 2S}{S_1 - S + R} + \frac{2(S_1 - S + R)}{\lambda}\right)\right)\right).$$

The benevolent challenger maximizes the same objective function as the voter

$$\max_{R \in \left[-\frac{B}{2}, \frac{B}{2}\right]} \sum_{a \in \{I, C\}} \mathcal{P}(a) N(\gamma(a)), \tag{11}$$

where

$$N(\gamma(a)) = \sum_{\omega \in \{\omega_1, \omega_2\}} \gamma(\omega|a) v(a|\omega) - \frac{\lambda}{2} \sum_{\omega \in \{\omega_1, \omega_2\}} \left(\gamma(\omega|a) - \mu(\omega)\right)^2.$$

From this maximization problem, we receive six possible candidates for the optimal R. Four interior R's:

$$R_1 = -\frac{\sqrt{\lambda|(B-2S)|}}{\sqrt{2}} + S - S_1,$$
$$R_2 = \frac{\sqrt{\lambda|(B-2S)|}}{\sqrt{2}} + S - S_1,$$
$$R_3 = -\frac{\lambda}{2} + \lambda\mu(\omega_1) + S - \frac{1}{2}\sqrt{\lambda(-2B + \lambda(1-2\mu(\omega_1))^2 + 4S)} - S_1,$$
$$R_4 = -\frac{\lambda}{2} + \lambda\mu(\omega_1) + S + \frac{1}{2}\sqrt{\lambda(-2B + \lambda(1-2\mu(\omega_1))^2 + 4S)} - S_1.$$

and two corner solutions $R_5 = \frac{B}{2}$ and $R_6 = -\frac{B}{2}$.

First, we evaluate the value of the objective function for the corner solutions. We obtain that for $\mu(\omega_1) \leq \tilde{\mu}(\omega_1)$ optimal platform is $R = \frac{B}{2}$ and for $\mu(\omega_1) > \tilde{\mu}(\omega_1)$ optimal platform is $R = -\frac{B}{2}$, where

$$\tilde{\mu}(\omega_1) = \frac{1}{4}\left(2 + 2(S - S_1)\left(-\frac{1}{\lambda} + \frac{2(B-2S)}{B^2 - 4S^2 + 8SS_1 - 4S_1^2}\right)\right).$$

Note that $\tilde{\mu}(\omega_1) = 0.5$ for $S_1 = S$. By comparing the values of the objective function generated by the corner solutions with the values of the objective for the interior solutions we obtain that any interior R is always sub-optimal.

G. Appendix: Solution with the incumbent who proposes an extreme platform

We study how the challenger's optimal policy platform changes when he faces the incumbent with an extreme policy platform. Without loss of generality, we consider the situation when the incumbent allocates all his political budget to the state ω_2. We summarize the policy platforms in Table 3.

Lemma 5 characterizes the optimal policy platform of the challenger. There are several

Politician/State	ω_1	ω_2
Incumbent (I)	0	$2S$
Challenger (C)	$v(\omega_1) = \frac{B}{2} - R$	$v(\omega_2) = \frac{B}{2} + R$

Table 3: Policy platforms of the extreme incumbent and the challenger.

situations. First, when the incumbent proposes the extreme platform that will pay off in the more probable state (if $\mu(\omega_1) < 0.5$), the challenger proposes another extreme platform by putting all his budget into another state. When the uncertainty is still high (if $\mu(\omega_1) < \hat{\mu}^{IE}$), the challenger proposes the same extreme policy. Otherwise, he diversifies the budget between states and decreases the voter's incentives to acquire information. If $\mu = \bar{\mu}^{IE}$ he can guarantee himself a victory by proposing multiple different policies. Figure 7 illustrates these results.

Lemma 5. *The challenger's optimal policy platform R^*, when the incumbent has the extreme policy platform $\{0, 2S\}$, is*

a) $R^* = -\frac{B}{2}$ *for* $\mu(\omega_1) \in (0, \hat{\mu}^{IE}]$,

b) $R^* = \frac{B+(2\mu(\omega_1)-3)S}{2\mu(\omega_1)-1}$ *for* $\mu(\omega_1) \in [\hat{\mu}^{IE}, \bar{\mu}^{IE}]$ *and*

c) $R^* : \ R \in [T_1^{IE}, T_2^{IE}]$ *for* $[\bar{\mu}^{IE}, 1]$.

Proof. We proceed analogously as in Appendix A and B. When incumbent's platform is 0 in the state ω_1 and $2S$ in ω_2, then the slope of the net utility equals to

$$\frac{\partial N(\gamma(I))}{\partial \gamma(\omega_1|I)} = -2S - 2\lambda(\gamma(\omega_1|I) - \mu(\omega_1)),$$

and, hence, the difference in posterior beliefs is

$$\gamma(\omega_1|I) - \gamma(\omega_1|C) = \frac{R-S}{\lambda}.$$

Using the tangency condition of concavification we obtain the following optimal posteriors:

$$\gamma(\omega_1|C) = \max\left(0, \min\left(1, -\frac{B\lambda + 2\left((S-R)^2 + \lambda(2S-R)\right)}{4\lambda(S-R)}\right)\right),$$
$$\gamma(\omega_1|I) = \max\left(0, \min\left(1, -\frac{B\lambda + 2\left((S-R)^2 - \lambda(2S-R)\right)}{4\lambda(S-R)}\right)\right).$$

It is then straightforward to obtain that the optimal interior challenger's policy platform is given by

$$R = \frac{B + (2\mu(\omega_1) - 3)}{2\mu(\omega_1) - 1}.$$

Further, by comparing the values of the objective function for different extreme R's and the optimal interior R, we obtain that for $\mu(\omega_1) \leq \hat{\mu}^{IE}$ optimal $R = -\frac{B}{2}$, where $\hat{\mu}^{IE} = -\frac{B+12S}{4(B+2S)}$; and for $\mu(\omega_1) \in [\hat{\mu}^{IE}, \bar{\mu}^{IE}]$ optimal $R = \frac{B+(2\mu(\omega_1)-3)}{2\mu(\omega_1)-1}$.

To find $\bar{\mu}^{IE}$, we characterize when the voter does not acquire any information. Similarly to Appendix B, we get that all policy platforms R's which satisfy $R \in [T_1^{IE}, T_2^{IE}]$ are optimal, where

$$T_1^{IE} = \frac{1}{2}\left(\lambda - 2\lambda\mu(\omega_1) - \sqrt{\lambda(2B + \lambda(1-2\mu(\omega_1))^2 - 4S)} + 2S\right),$$
$$T_2^{IE} = \frac{1}{2}\left(\lambda - 2\lambda\mu(\omega_1) + \sqrt{\lambda(2B + \lambda(1-2\mu(\omega_1))^2 - 4S)} + 2S\right).$$

Then, by solving $T_1 = T_2 = \frac{B+(2\mu(\omega_1)-3)}{2\mu(\omega_1)-1}$ we get that $\bar{\mu}^{IE} = \frac{\left(B\lambda - \sqrt{2}\sqrt{-\lambda(B-2S)^3} - 2\lambda S\right)}{(2B\lambda - 4\lambda S)}$. Note that, in contrast to the situation when the incumbent has a stability platform, the voter always acquires information for $\mu(\omega_1) \leq \frac{1}{2}$. It could be observed from T_1^{IE} and T_2^{IE} that, if $\mu(\omega_1) \leq \frac{1}{2}$, optimal R's, for which the voter does not acquire any information, are less than $-\frac{B}{2}$. □

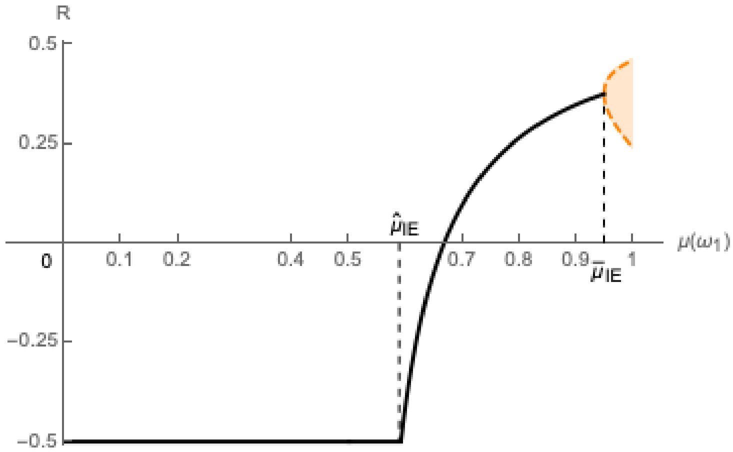

Figure 7: The challenger's optimal policy platform, when the incumbent offers an extreme policy platform, as a function of $\mu(\omega_1)$ and $\lambda = 0.5$, $S = 0.6$, $B = 1$. The orange area depicts the optimal R that dissuades the voter from acquiring any information.

H. Appendix: Solution with the entropy cost function

We consider the same setup as in Section 3. However, now we use the entropy cost function (Shannon, 1948; Cover and Thomas, 2012). For simplicity, we reformulate the voter's problem as a problem of choosing conditional choice probabilities rather than the choice of posterior probabilities (Matějka and McKay, 2015).

RI voter's problem. *The voter's problem is to find a vector function of conditional choice probabilities $\mathcal{P} = \{\mathcal{P}(a|\omega)\}_{a\in A=\{I,C\}}$ that maximizes expected payoff less the information cost:*

$$\max_{\{\mathcal{P}(a|\omega)\}_{a\in A}} \left\{ \sum_{a\in A} \sum_{\omega\in\Omega} v(a|\omega)\mathcal{P}(a|\omega)\mu(\omega) - \lambda\kappa(\mathcal{P}) \right\}$$

subject to

$$\forall a \in A: \quad \mathcal{P}(a|\omega) \geq 0 \;\; \forall\omega \in \Omega, \tag{12}$$

$$\sum_{a\in A} \mathcal{P}(a|\omega) = 1 \;\; \forall\omega \in \Omega, \tag{13}$$

where the unconditional choice probabilities are

$$\mathcal{P}(a) = \sum_{\omega\in\Omega} \mathcal{P}(a|\omega)\mu(\omega), \quad a \in A.$$

The cost of information is $\lambda\kappa(\mathcal{P})$, where $\lambda > 0$ is the given unit cost of information and κ is the amount of information that the agent processes, which is measured by the expected reduction in the entropy:

$$\kappa(\mathcal{P}) = -\sum_{a\in A}\mathcal{P}(a)\log\mathcal{P}(a) + \sum_{a\in A}\sum_{\omega\in\Omega}\mathcal{P}(a|\omega)\log\mathcal{P}(a|\omega)\mu(\omega). \tag{14}$$

Using the results of Matějka and McKay (2015) we obtain the voter's optimal conditional probabilities:

$$\mathcal{P}(a|\omega) = \frac{\mathcal{P}(a)e^{v(a|\omega)/\lambda}}{\sum_{a\in A}\mathcal{P}(a)e^{v(a|\omega)/\lambda}},$$

where

$$\mathcal{P}(C) = \max\left(0, \min\left(1, \frac{e^{\frac{S}{\lambda}}\left(e^{\frac{S+R}{\lambda}} + e^{\frac{B+4R}{2\lambda}}(-1+\mu(\omega_1)) - e^{\frac{B}{2\lambda}}\mu(\omega_1)\right)}{-e^{\frac{B+2S}{2\lambda}} + e^{\frac{B+v}{\lambda}} + e^{\frac{2S+R}{\lambda}} - e^{\frac{B+2S+4R}{2\lambda}}}\right)\right),$$

$$\mathcal{P}(I) = 1 - \mathcal{P}(C).$$

The challenger solves the same problem as in Equation (6). Applying the same steps as in Appendix B we obtain:

a) When the voter acquires information:

$$R = \min\left(\frac{B}{2}, \max\left(-\frac{B}{2}, A\right)\right),$$

where

$$A = \lambda\log\frac{-\sqrt{-(e^{\frac{B}{\lambda}} - e^{\frac{2S}{\lambda}})^2(-1+\mu(\omega_1))\mu(\omega_1)} + e^{\frac{B+2S}{2\lambda}}(-1+2\mu(\omega_1))}{e^{\frac{B}{\lambda}}(-1+\mu(\omega_1)) + e^{\frac{2S}{\lambda}}\mu(\omega_1)}.$$

b) When the voter does not acquire information:

- and $\mu(w_1) < 0.5$

$$R \in \left[A,\ \min\left(\frac{B}{2}, \lambda\log\frac{e^{\frac{-S}{\lambda}}(e^{\frac{B}{2\lambda}} + \sqrt{e^{\frac{B}{\lambda}} + 4e^{\frac{2S}{\lambda}}(-1+\mu(\omega_1))\mu(\omega_1)})}{2\mu(\omega_1)}\right)\right].$$

- and $\mu(w_1) > 0.5$

$$R \in \left[\max\left(-\frac{B}{2}, \lambda \log \frac{e^{\frac{-S}{\lambda}}(e^{\frac{B}{2\lambda}} - \sqrt{e^{\frac{B}{\lambda}} + 4e^{\frac{2S}{\lambda}}(-1+\mu(\omega_1))\mu(\omega_1))}}{2\mu(\omega_1)}\right), A\right].$$

Then, we use a numerical example and illustrate the solution for given parameters. Figure 8 presents the optimal choices of the policy platform by the challenger. These platforms are similar to the one described in Section 3. Particularly, Figure 8 illustrates that, if the challenger has enough political budget and uncertainty is low, he can propose multiple platforms that dissuade the voter from acquiring any information and, hence, the voter chooses him with certainty (Corollary 1); if the victory can not be guaranteed, the optimal allocation of the budget for the state weakly decreases with the probability of the state happening (Proposition 1); finally, if the prior belief is uninformative ($\mu(\omega)^* = 0.5$), the slightest change in the likelihood of the state switches the optimal policy platform from one extreme to another (Corollary 2). It also shows that, if the challenger has a limited political budget, his opportunities to dissuade the voter from acquiring less information are limited and, hence, he proposes an extreme policy platform even when uncertainty is low (Corollary 4).

Figure 10 shows that the range of prior beliefs, for which the challenger will be chosen blindly ($\mathcal{P}(C) = 1$), increases in λ (Corollary 3). Figure 9 shows that, if the incumbent is weak, then the highest probability of him being elected is achieved for some interior cost of information $0 < \lambda < 0.5$. After that, the rise in the cost of information decreases his probability of being elected. At the same time, if the incumbent is strong, a rise in the cost of information decreases the probability that he is elected (Proposition 2). Further, Figure 10 illustrates that the increase in uncertainty makes the incumbent strong, and increases his chances of being elected (Proposition 3).

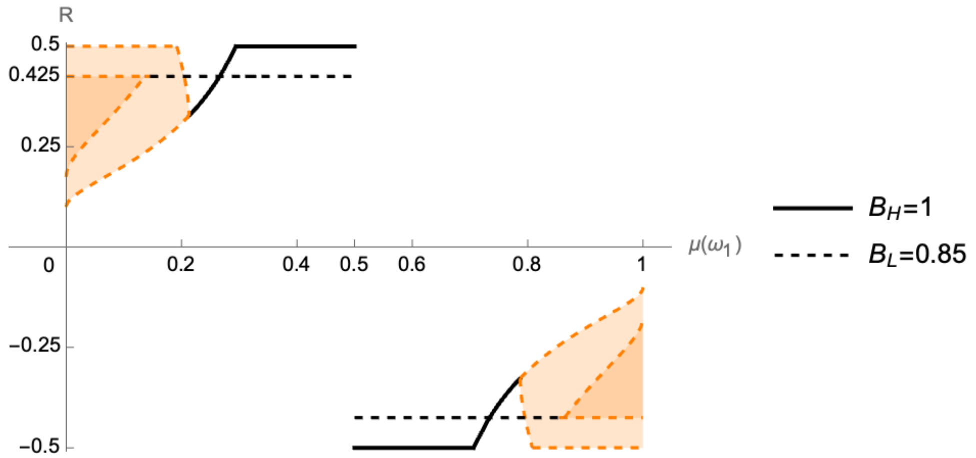

Figure 8: The challenger's optimal policy platform as a function of $\mu(\omega_1)$ for $B_H = 1,\ B_L = 0.85$ and $\lambda = 0.5$, $S = 0.6$. The light (for $B_H = 1$) and dark ($B_L = 0.85$) orange areas depict optimal R's that dissuade the voter from acquiring any information.

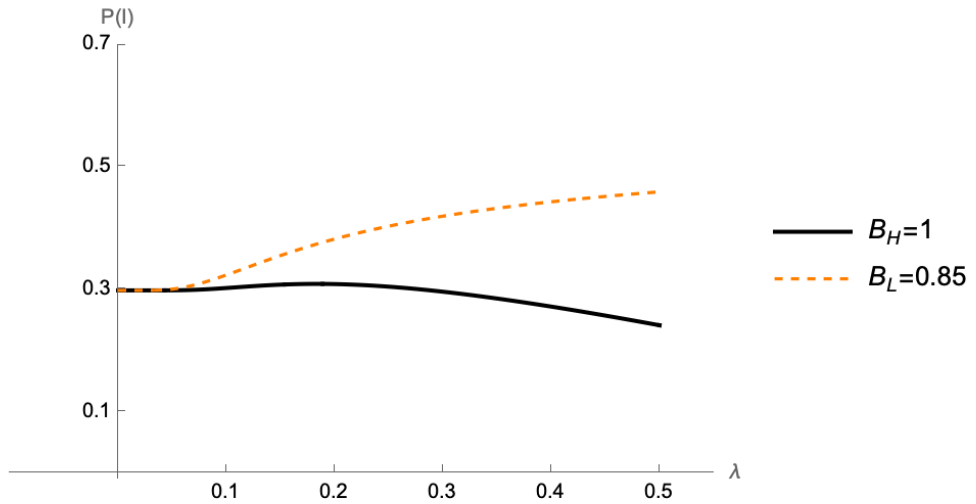

Figure 9: The unconditional probability of the incumbent being selected as a function of λ for $B_H = 1,\ B_L = 0.85$ and $\mu(\omega_1) = 0.7$, $S = 0.6$.

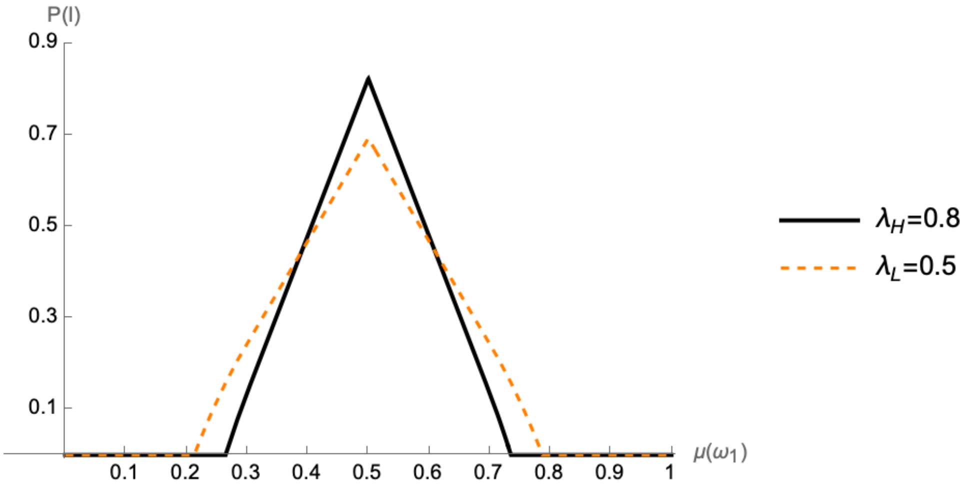

Figure 10: The unconditional probability of the incumbent being selected as a function of $\mu(\omega_1)$ for $\lambda_H = 0.8,\ \lambda_L = 0.5$ and $B = 1$, $S = 0.6$.