

Soothing politics*

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January 2012

Abstract

We consider a political agency model where voters learn information about some policy-relevant variable, which they can strategically ignore when it impedes their desire to hold optimistic beliefs. Voters' excessive tendency to sustain optimism results in inefficient political decision-making because political courage does not pay off when voters have poor information. However, voters infer information from policies and their incentives to ignore bad news decrease with their expected efficiency. This complementarity between incentives generates multiple equilibria: an equilibrium where politicians are rewarded for selecting optimal policies and another where they shy away from reforms to cater to the electorate's demand for soothing policies.

J.E.L. Classification: D03, D72, D78, D82, D73.

Keywords: political agency, selective exposure, overoptimism.

*I thank Jean Tirole for his advice, as well as Matthieu Bouvard, Mathias Dewatripont, Guido Friebel, Andrea Prat, Florian Schuett and conference participants in Lyon, Padova, Madrid, Toulouse and Barcelona.

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Selective exposure to information is one of the best-documented phenomena in social psychology¹ but economists have only just started to incorporate it into their models.² In particular, little research has so far focused on the consequences of this form of manipulation of information for policy-making, although one may suspect selective exposure to have an important impact on policy, and hence on welfare. Cass Sunstein [32], for instance, sees the ascendancy of personalized information (notably through the Internet³) as one of the most important challenges for modern democracies. Representative democracy relies on the electoral process to discipline potentially biased or incompetent policy-makers, and thus requires that voters have correct information on the most important policy issues and stakes. Excessive filtering of information could indeed increase the temptation for politicians to posture for electoral purposes, leading to policy distortions.

There are several reasons why people may select the information they acquire. First, there is an argument related to bounded rationality: because time and attention are scarce resources, people would rather focus their interest on information regarding their favorite topics. Reading and processing information is costly, especially when it is technical and requires a good educational background. Second, and in line with the modeling of this paper, selective information acquisition (or avoidance of information) may be motivated by cognitive needs. We assume that agents are prone to selecting information because they experience emotional utility: they care about their beliefs *per se*. Psychologists have for a long time underlined the fact that people may have an intrinsic preference for beliefs, notably due to self-image concerns or to utility from anticipation: beside physical outcomes, agents get anticipated utility (savoring or anxiety) from the expectation of these outcomes. As shown by Loewenstein [24], anticipatory utility can lead people to delay the enjoyment of events in order to savor them. In addition, it creates a demand for (potentially inaccurate) self-serving beliefs.

¹Selective exposure refers to the tendency of people to deliberately (sometimes unconsciously) look for, select or recall mainly information that bolsters their prejudices, self-esteem, political views etc.

²For instance, Mullainathan and Shleifer [28] consider the incentives for the media to report information truthfully when readers in reality look for information biased towards their prior views.

³For instance, the RSS format makes it possible for people to preselect a list of their favorite web sites and keep up with them in an automated manner.

Political issues are particularly prone to belief manipulation. First, politics has a strong emotional and affective dimension, creating a demand for self-serving beliefs: many issues are intimately connected with the individual’s identity⁴ or have the potential to cause distress or fear.⁵ Second, politics is complex and the validity of arguments is usually not obvious to assess. Third, the benefits of ignorance (optimism) often outweigh the cost of poor information: on issues involving collective decision-making, the instrumental value of information is indeed low because each single voter is atomistic and consequently has no hope of swinging electoral outcomes. To paraphrase Caplan [14], belief manipulation is not “an *ad hoc* anomaly but a predictable response to unusual incentives”.

Voter information has always been a central topic in political science: “Political information is to democratic politics what money is to economics: it is the currency of citizenship” (Carpini and Keeter [17], quoted by Kuklinski *et al.* [23]). But while what being informed means is relatively clear, it is important to distinguish between different forms of failures to be informed. In particular, Kuklinski *et al.* stress the difference between “uninformed” and “misinformed” voters. When voters are uninformed, individual mistakes average out at the aggregate level. Furthermore, voters use heuristics which are shown to work pretty well on average. Voter uninformed thus does not seem to be so much of an issue. However, when voters are “misinformed”, meaning that they confidently hold wrong beliefs, they suffer from a systematic bias which prevents them from monitoring politicians in an appropriate way. Kuklinski *et al.* documents how voter beliefs are often skewed in the direction of their preferences, which creates an important challenge for democracy: these systematic biases may indeed have an adverse effect on the pool of politicians or on policies, since the exploitation of voter biases politically pays off.

Another important dimension of voter information which our paper focuses on is what political scientists call “feedback”: voters do learn from policies and policy does change attitudes (see for instance Pierson [29]). Our paper considers voter

⁴Ideological or collective beliefs indeed play an important role in many political issues: immigration, redistribution, foreign policy etc.

⁵For instance, international tensions, terror attacks, alarming reports on the socio-economic situation, risks of pandemia etc.

information from both perspectives: voter awareness is both a condition for and a consequence of good policy-making. Recent reforms of the pensions systems in Europe provide an example of this circularity. As shown by Boeri, Boersch-Supan and Tabellini ([9] and [10]), these reforms are possible only when voters get aware of their relevance.⁶ However, once a reform has taken place, feedback occurs and attitudes towards reform evolve significantly. Politicians thus behave like “followers” until a critical point when either attitudes change or an external shock reveals the urge for a reform, a point from which they can credibly act like “leaders” who shape people’s beliefs. The current debt crisis in the Eurozone is another striking example of such a political cycle.

In this paper, we examine the consequences of voters’ own beliefs manipulation on political decisions, with a particular focus on their attitude towards reforms. Structural reforms are often an important source of anxiety, notably because they tend to reveal that times are hard and cast further uncertainty on what the future has in store. We argue that they are so lengthy and difficult to implement because politicians who reform are not rewarded enough when voters hold over-optimistic beliefs. In some sense, rejecting reforms is for voters a consistent way of denying the bad news they convey.

We construct a political agency model with retrospective voting where bad politicians may be filtered out according to their past decision (reform or status quo). Policy-makers may be congruent with voter preferences (they wish to maximize social welfare) or biased towards the status quo. Furthermore, they care about re-election. The social optimality of the reform decision depends on another variable known privately to the politician: the state of the world. Reelection concerns have a disciplining effect on the biased politician, who is sometimes induced to reform when needed to signal congruence. However, this disciplining effect is lower when voters are more optimistic about the likelihood of being in a good state, since in this case the status quo is perceived as more likely to be the right decision. Therefore, the ability of voters to screen politicians depends on the quality of their information

⁶This has taken very long in countries like France or Italy, where the common wisdom that the system was sustainable in the long run was at odds with a severe underestimation of its costs.

on the state: if voters have an incorrect perception of the right political decisions, policy-makers may take inefficient decisions because political courage does not pay off.

More precisely, we consider a game in which voters learn information on the state of the world from two different sources: an external signal and the policy decision itself. Following Benabou-Tirole [5], we assume that voters have imperfect memory and can manipulate their beliefs about the state of the world in a self-serving way by forgetting the signal. Since voters also learn from political decisions, their optimal repression strategies depend on how much they expect to learn. In turn, the policy-maker's incentive to reform (and consequently how much negative or positive information on the state of the world is conveyed) depends on how aware voters are that a reform is actually useful. Therefore, informational complementarities arise endogenously between the quality of voters' information and the information conveyed by the political action, leading to multiple equilibria:

(i) If voters expect that the political decision conveys high-quality information on the state of the world (efficient decision-making), the returns from investing in ignorance are low: one is less likely to lie to oneself if one expects contradicting news to come up later. Voters abstain from repressing information and thus have relatively accurate beliefs in equilibrium. This in turn provides incentives for the policy-maker to select the optimal policy.

(ii) However, if voters expect inefficient decision-making, i.e. that the political action will convey little information about the state of the world, they have a strong incentive to disregard bad news. This lowers the net gain that politicians derive from behaving courageously and tends to generate inefficient decision-making.

The multiplicity of equilibria suggests that there might be different policy outcomes in otherwise similar countries, possibly corresponding to different ideologies: in some countries, a higher accuracy of voters' beliefs goes along with more efficient policy-making whereas other countries are less reform-minded. This multiplicity is reminiscent of the findings of Benabou-Tirole [6], Benabou [4], or Dessi [19].

The key feature of the model is the fact that policy-makers base their political decisions on information that may damage voters' desire to hold optimistic beliefs.

In a static context, belief manipulation affects the expected electoral payoff that politicians get when they undertake reforms. In the long run, politicians still get rewarded for behaving in the socially desirable way, but they have an additional incentive to "soothe" the electorate because they get a higher continuation utility from being reelected when voters are expected to be more optimistic in the future.

The fact that politicians cater to the electorate's demand for soothing policies typically slows down the pace of reforms: first, voters are excessively optimistic, so that politicians are less disciplined and stick to the status quo more often; second, voters are less able to screen politicians, so the average quality of politicians increases only slowly. In a soothing equilibrium, reforms are thus more likely to be implemented in steps. Each step conveys information that is detrimental to voters in terms of emotional utility, but voter pessimism is a necessary condition for political efficiency, so each try paves the way for future reforms.

The paper is organized as follows. Section 1 provides a brief literature review. In section 2, we present and solve the benchmark political model with rational voters. In section 3, we introduce the possibility for voters to invest in strategic ignorance. In Section 4, we derive the political equilibrium when voters have motivated beliefs. In section 5, we discuss the results and consider possible extensions. Section 6 concludes.

1 Related literature

This paper is based on and connects two different blocks of the literature:

(i) In line with a strand of the behavioral economics literature, we allow agents to manipulate their beliefs for self-serving motives. Strategic manipulation of information has been widely discussed both by psychologists and economists, starting with Freud and his theory of unconscious repression. Festinger's theory of cognitive dissonance [20] posits that an individual holding two conflicting elements of cognition experiences a psychological tension that he can only escape by reducing the dissonance between these two elements, notably by repressing dissonant information. In economics, the first paper is by Akerlof and Dickens [2], who show that workers in

a dangerous job may prefer to remain ignorant of the exact risk they face at work, despite the instrumental value of this information. Modeling beliefs explicitly, Carrillo and Mariotti [16] show that strategic ignorance may help a time-inconsistent agent overcome his procrastination problem. Benabou and Tirole [5] introduce a memory management game in which an agent who needs to be confident about his ability chooses whether or not to repress discouraging news, and show that individuals may end up in self-traps. Other papers in which belief manipulation is driven by anticipatory utility include Caplin-Leahy [15], Köszegi [22], Benabou-Tirole [7] and Brunnermeier-Parker [12].

(ii) Second, our paper relates to the literature on the political economy of reforms, particularly to a strand of papers based on asymmetric information: when there is uncertainty about their ability or preferences, policy-makers in office may use policies to signal desirable traits to the electorate in the hope of boosting their reelection chances. Career concerns of policy-makers are shown to have a potential disciplining effect on “bad politicians”, like in this paper, but can also induce “good” policy-makers to posture in order to increase their electoral prospects, sometimes at the expense of social welfare. For instance, in a model where voters have heterogeneous beliefs about the best policy, Harrington [21] shows that a politician may manipulate policy for reelection purposes. Maskin and Tirole [26] show that a politician who wants to display his congruence with the electorate may pander to public opinion by selecting the most popular action, i.e. the policy perceived to be right by a majority of voters. Another class of models has politicians attempting to signal their competence: Canes-Wrone *et al.* [13] consider a situation where an imperfectly informed politician sometimes selects an action contrary to that which his private information suggests in order to maximize his chances of appearing perfectly informed. A critical feature of these models is that how much political behavior is “distorted” (whether it is good or bad for welfare) by career concerns depends on the amount of voter uncertainty, as stressed in recent papers like Acemoglu *et al.* [1] or Bonfiglioli and Gancia [11]. In this paper, we endogenize voter uncertainty through voter strategic ignorance and analyze the interplay between voter incentives to disregard worrying information and political incentives to signal congruence for

career concerns motives.

Compared to the extant literature, the contribution of this paper is to introduce behavioral decision-making into the realm of political economy. A substantial body of experimental and empirical evidence casts doubt on the assumption that voters are rational (see Caplan [14] for a review). However, to our knowledge, very few economic papers have focused on the impact of behavioral decision-making on political outcomes. Notable exceptions are Benabou and Tirole [6] and Schuett and Wagner [31]. The former paper considers agents manipulating information in order to sustain desirable beliefs on the relative impact of luck and effort on outcomes, and show that, in the aggregate, two political equilibria with different levels of taxation and redistribution may coexist. The latter considers hindsight-biased voters and show that the presence of the bias disciplines politicians and sometimes enhances social welfare. As Besley [8] notes, it is important for economists to “understand when simple and sensible behavioral rules lead to large policy distortions”. Unlike many models where non-adoption of useful policies is due to dispersion of information (Harrington), communication failures or to free-riding,⁷ we assume that perfect information is freely available and disregard communication issues. Our model mirrors a model of costly information acquisition with voters being willing to pay to “unlearn” relevant information. A critical behavioral feature of politics is that voters tend to “favor politicians who generate some utility for them during their term in office” (Besley, 2006). In this context, policy-makers distort their policies to soothe the electorate rather than pander to it, although they do not care about voters’ emotional utility *per se*. What is new in our model is that the political action conveys information that affects the well-being of voters in the current period (utility from anticipation). The policy choice thus has a double informational content: as stressed by the political agency literature, it is relevant to voters to screen good politicians; as suggested by the economics and psychology literature, it may boost or jeopardize voter optimism.

⁷Voters would never incur any positive cost to acquire useful information because they have a zero probability to influence the outcome of the election, so that the instrumental value of information is zero.

2 The model

We construct a model of political agency in which a policy-maker tries to develop a reputation for being congruent with the electorate in order to increase his chances of reelection.

There are two periods and two states of the world: $\omega \in \{H, L\}$ with $\Pr(\omega = H) = 1 - \Pr(\omega = L) = q$. In each period, the policy-maker in office, who has private information on ω , chooses to undertake a reform ($X = 1$) or not ($X = 0$). ω is i.i.d. across periods. For the ease of notation, we do not use subscripts for period 1 variables and denote period 2 variables ω_2 and X_2 .

2.1 Voter preferences

From the point of view of the electorate, the reform has a cost c and yields a state-dependent benefit b : $b = b_L$ in state $\omega = L$ and $b = b_H$ in state $\omega = H$, with $b_L > c > b_H$. Reform is thus the socially optimal policy in the bad state ($\omega = L$) only. There is a mass 1 of voters with identical preferences. On top of the payoff derived when a reform is undertaken, voters get a state-dependent utility a_ω so that a representative voter's payoff-relevant utility⁸ $u(\omega, X)$ is given by:

	$\omega = H$	$\omega = L$
$X = 1$	$a_H + b_H - c$	$a_L + b_L - c$
$X = 0$	a_H	a_L

2.2 Policy-maker preferences

There are two types of politicians $\theta \in \{C, B\}$ characterized by an intrinsic preference for reform given the state of the world. Let us normalize to 0 the payoff of any policy-maker when he does not reform and denote by γ_ω^θ the marginal cost of implementing a reform in state ω for type θ . The policy-maker thus has the following payment matrix:

⁸We explicitly write payoff-relevant utility because a belief-relevant dimension will be included later in the utility function.

	$\omega = H$	$\omega = L$
$X = 1$	$-\gamma_H^\theta$	$-\gamma_L^\theta$
$X = 0$	0	0

Beside this intrinsic preference, the politician gets utility δ in the case of reelection. The term δ captures both the continuation gross utility from implementing his preferred action in period 2 and possible private benefits from being in office ("ego rents", perks...). Notice that we do potentially allow δ to be greater than 1 and that we assume that δ is independent of θ .

Type $\theta = C$ is said to be congruent with the electorate in that he has the same preference ordering over policies as voters: $\gamma_L^C < 0 < \gamma_H^C$. However, type $\theta = B$ is biased and would never reform if his action was only driven by his intrinsic preferences: $\gamma_H^B > \gamma_L^B > 0$.⁹

For simplicity, we assume that $\min\{-\gamma_L^C, \gamma_H^C\} > \delta > \gamma_H^B$. Consequently, type $\theta = C$ behaves like a "commitment type," who always implements the socially optimal action, as the intrinsic benefit he gets from doing so dwarfs his reelection concerns. However, type $\theta = B$ may go against his natural bias towards the status quo if it significantly increases his probability of reelection.

The prior probability that the policy-maker is congruent is denoted by π .

2.3 Electoral competition

The incumbent policy-maker runs for reelection in period 2. He faces an opponent whose prior probability of being congruent is denoted $\tilde{\pi}$. $\tilde{\pi}$ is known by voters at the time they vote but, from the point of view of the incumbent, it is drawn from a uniform distribution on $[0, 1]$.¹⁰

The timing of the game is as follows:

⁹For instance, the bias may come from some private benefit the policy-maker has to forego when reforming. This private benefit could represent a non-monetary opportunity cost of effort or stem from the monetary contribution received from some anti-reform lobby.

¹⁰Alternatively, each voter has perception $\tilde{\pi}$ on the probability of the opponent being congruent, with $\tilde{\pi}$ uniformly distributed across voters.

Period 1

- 1a. The random variables $\omega \in \{H, L\}$ and $\theta \in \{C, B\}$ are independently realized and privately observed by the policy-maker.
- 1b. The policy-maker selects $X \in \{0, 1\}$.

Period 2

- 2a. $\tilde{\pi}$, the probability that the challenger is congruent, is realized and learnt by voters.
- 2b. The election opposing the incumbent policy-maker and the challenger takes place.
- 2c. The newly-elected politician observes period-2 state ω_2 and selects $X_2 \in \{0, 1\}$.
- 2d. Voters receive both their period 1 and period 2 utilities $u(\omega, X)$ and $u(\omega_2, X_2)$.

2.4 Voting behavior

A critical feature of the game is that voters get their period 1 utility at the end of period 2. So at the time when the election takes place, voters only observe the period 1 policy X and the challenger's probability of being congruent $\tilde{\pi}$, but they cannot observe the period 1 state. They compare the expected congruence of the incumbent and that of the challenger. Let $\hat{\pi}_X \equiv \Pr(\theta = C|X)$ denote voters' beliefs on the incumbent's type conditional on action X . We focus on the equilibrium in which all voters vote sincerely, i.e. vote for the incumbent if and only if $\hat{\pi}_X \geq \tilde{\pi}$.¹¹ This equilibrium is the only one if one excludes weakly dominated strategies: voters are indeed policy-motivated and anticipate that the winner will implement his preferred policy in period 2 because he no longer has reelection concerns.¹² Hence voters have an expected period 2 utility which is increasing in the newly elected politician's probability of being congruent. Viewed *ex ante*, the reelection probability of the

¹¹Given that there is a continuum of voters, there is an infinity of voting equilibria.

¹²This is an artifact of the two-period modeling and would not be true more generally. What matters for our theory is that the reelection probability increases with perceived congruence, which would be true even in more general settings.

incumbent when he selects action X thus equals

$$\Pr(\tilde{\pi} \leq \hat{\pi}_X) = \hat{\pi}_X.$$

So the total utility of the incumbent reads

$$U_\theta(\omega, X) \equiv -\gamma_\omega^\theta \mathbb{1}_{X=1} + \delta \hat{\pi}_X.$$

3 Benchmark: Equilibrium with rational voters

3.1 Equilibrium

As a congruent politician always selects the optimal decision, we only focus on the behavior of the biased type. Denoting x and y the probabilities that he undertakes reform in states $\omega = L$ and $\omega = H$, a perfect Bayesian equilibrium is a quadruple $(x^*, y^*, \hat{\pi}_1(x^*, y^*), \hat{\pi}_0(x^*, y^*))$ such that:

- i) $x^* \in \arg \max_x x(-\gamma_L^B + \delta \hat{\pi}_1(x^*, y^*)) + (1-x)\delta \hat{\pi}_0(x^*, y^*)$
- ii) $y^* \in \arg \max_y y(-\gamma_H^B + \delta \hat{\pi}_1(x^*, y^*)) + (1-y)\delta \hat{\pi}_0(x^*, y^*)$
- iii) $\hat{\pi}_1(x^*, y^*) = \frac{\pi(1-q)}{\pi(1-q) + (1-\pi)(qy^* + (1-q)x^*)}$
- iv) $\hat{\pi}_0(x^*, y^*) = \frac{\pi q}{\pi q + (1-\pi)(q(1-y^*) + (1-q)(1-x^*))}$.

Reelection probabilities $\hat{\pi}_0(x^*, y^*)$ and $\hat{\pi}_1(x^*, y^*)$ are Bayesian updatings consistent with equilibrium behavior (x^*, y^*) . They depend on q because voters do not observe the realization of ω at the time of the election, so they update their beliefs on θ on the basis of their prior beliefs on ω . This feature will play a critical role in the remainder of the paper.

Lemma 1 *In any equilibrium, $y^* = 0$.*

Proof: From $\gamma_H^B > \gamma_L^B$, we derive that the equilibrium is monotonic: $y^* \leq x^*$.

Furthermore, $y^* > 0 \Rightarrow x^* = 1$ and $x^* < 1 \Rightarrow y^* = 0$.

We remark that $\hat{\pi}_0(x^*, y^*) - \hat{\pi}_1(x^*, y^*)$ has the same sign as $qy^* - (1-q)(1-x^*)$.

If $y^* > 0$, then $x^* = 1$, which implies $\hat{\pi}_0(x^*, y^*) > \hat{\pi}_1(x^*, y^*)$.

Since $\gamma_H^B > 0$, $y^* > 0$ cannot be utility-maximizing for the policy-maker.

A contradiction. □

Proposition 1 *There exists a unique perfect Bayesian equilibrium in which the biased politician is sometimes disciplined, i.e. reforms in bad states with probability $x^* \in [0, 1)$.¹³ The equilibrium probability x^* is a decreasing function of q . Furthermore, there exists a threshold $\pi^a \in [0, 1)$ such that $x^* > 0 \Leftrightarrow \pi < \pi^a$.*

Proof: See the Appendix.

Reelection concerns here play a disciplining role. As the politician is known to have a potential bias towards the status quo, the mere fact of implementing a reform conveys good news about his congruence. When he is sufficiently patient, or when the bias is sufficiently small, reelection concerns lead the biased politician to sometimes go against his bias. However, these concerns are not sufficient to perfectly discipline him, in that there is always a positive probability that the politician indulges his bias. The disciplining effect is higher for intermediate values of π , because attempts to convince voters of his congruence are more effective when there is more prior uncertainty about the politician's type.

A critical feature of this model, on which we will build later, is that the efficiency of political decision-making (i.e. how much disciplined the biased type is) depends on the level of voter optimism, here captured by the prior q . Whenever voters are optimistic about ω , the reputational cost for the incumbent of selecting the status quo is low because voters perceive it to be likely to be the right decision. The policy-maker may even become completely unresponsive to reelection concerns, i.e. never reform at all, when voter optimism exceeds some critical value. However, when voters are pessimistic, they correctly interpret the status quo as being likely to come from a biased politician. In this case, the fear of being ousted in the next election becomes sufficiently serious to discipline biased policy-makers.

In any equilibrium, the policy-maker's expected welfare is increasing in q , independently of his type and of the relevant state. Denoting the expected total utility of

¹³In order to simplify notation, we drop the argument y^* in functions $\hat{\pi}_X$, recalling that it always equals 0.

the politician by $\tilde{U}_\theta(\omega) = \max_X U_\theta(\omega, X)$, we notice that in an equilibrium involving $x^* > 0$:

$$\begin{aligned}\tilde{U}_\theta(\omega) &= \delta \hat{\pi}_0 = -\gamma_\omega^\theta + \delta \hat{\pi}_1 = -\gamma_\omega^\theta + \delta \frac{\pi}{\pi + (1-\pi)x^*} \text{ for } (\theta, \omega) \neq (C, L) \\ \text{and } \tilde{U}_C(L) &= -\gamma_L^C + \delta \frac{\pi}{\pi + (1-\pi)x^*}\end{aligned}$$

which are all increasing in q since $\frac{\partial x^*}{\partial q} \leq 0$.

An increase of q consequently has the same marginal impact on the expected welfare of all types of policy-maker as long as $x^* > 0$. When q becomes large enough to drive x^* to 0, the expected payment to a reformist no longer depends on q , since he perfectly reveals himself as congruent in this equilibrium. Still, it is easy to show that all types prefer an equilibrium involving $x^* = 0$ to $x^* > 0$, so it is clear that politicians would like to have voters believe that the state $\omega = H$ is more likely.

This raises the issue of political communication and propaganda: policy-makers, even when unbiased, have an incentive to convince voters that good states are more likely. Of course, voters should be aware of such incentives and listen carefully to optimistic speeches. But by no means can voters distinguish among politicians those who are more likely to send credible messages, as in the current setting the interests of all politicians with respect to voters' beliefs are aligned.

4 The model with strategic ignorance

In this section, we endogenize voter optimism in a model where voter excessive optimism is driven by selective avoidance of information. We examine the interplay between voter strategic ignorance and the efficiency of political decisions.

4.1 Strategic ignorance: the demand side

From now on, we assume that voters care about their beliefs *per se*. Specifically, we assume that voters experience anticipatory utility, i.e. get present utility from the prospect of future outcomes, where this emotional utility is increasing in the expectation of future payoffs. The utility that voters derive from period 1's reform

decision $u(\omega, X)$ is still obtained with delay (at the end of period 2), but in period 1 voters experience savoring utility equal to a fraction s of the expectation of this payoff $sE_\omega u(\omega, X)$.¹⁴

We assume $a_H + b_H - c > a_L + b_L - c$, which implies that $u(H, X) > u(L, X)$ for all X : utility is always higher in the good state no matter what. Consequently, emotional utility is higher when the perceived probability of the good state increases. The desire to remain optimistic provides a clear incentive to disregard potential “bad news” on ω .

4.2 Strategic ignorance: the supply side

Let us assume that voters now have access to some exogenous source of information on ω . This information is modeled as a signal $\tilde{\sigma}$ which perfectly reveals a bad state $\omega = L$. More precisely, $\tilde{\sigma} \in \{\emptyset, L\}$ with $Pr(\tilde{\sigma} = L|\omega = L) = Pr(\tilde{\sigma} = \emptyset|\omega = H) = 1$.¹⁵

We follow Benabou and Tirole [5] and assume that voters have imperfect memory and can strategically repress bad news. More precisely, they choose the probability with which they recall news revealing that $\omega = L$ (see Figure 1). The recollec-

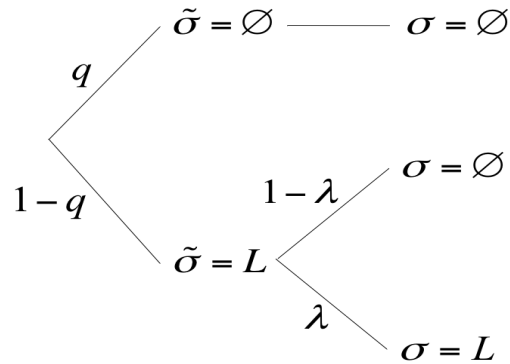


Figure 1: The game of selective memory

tion σ they have from $\tilde{\sigma}$ thus has conditional distribution: $Pr(\sigma = \emptyset|\tilde{\sigma} = \emptyset) =$

¹⁴Linearity is only assumed for simplicity.

¹⁵This information could come from an unbiased medium, from social interaction, from another country. In any case, a bad signal $\tilde{\sigma} = L$ is “hard” information.

1 and $Pr(\sigma = L|\tilde{\sigma} = L) = \lambda$.¹⁶

Voters select λ , going from complete avoidance of conflicting information ($\lambda = 0$) to full awareness ($\lambda = 1$). We assume that forgetting $\omega = L$ has an exogenous cost m .¹⁷

4.3 Timing

Period 1

- 1a. The random variables $\omega \in \{H, L\}$ and $\theta \in \{C, B\}$ are independently realized and privately observed by the policy-maker.
- 1b. Voters learn $\tilde{\sigma}$. Upon observing $\tilde{\sigma} = L$, each voter chooses $\lambda = Pr(\sigma = L|\tilde{\sigma} = L)$, the probability with which he recall bad news.
- 1c. The policy-maker selects $X \in \{0, 1\}$.
- 1d. The signal σ is realized according to the conditional distribution chosen in 1b.
- 1e. Voters observe X and σ , update their beliefs on ω and experience anticipatory utility $s.E_\omega[u(\omega, X)|\sigma, X]$.

Period 2

- 2a. $\tilde{\pi}$, the probability that the challenger is congruent, is realized and learnt by voters.
- 2b. The election opposing the incumbent policy-maker and the challenger takes place.
- 2c. The newly-elected politician observes period-2 state ω_2 and selects $X_2 \in \{0, 1\}$.
- 2d. Voters observe both their period 1 and period 2 utilities $u(\omega, X)$ and $u_2(\omega_2, X_2)$.

¹⁶Things would not change qualitatively if voters would receive an imperfect signal on the state of the world but computations are simpler when the voters know for sure that the state is $\omega = L$.

¹⁷ m stands for the cost of repression, which can be a physical, psychological or an opportunity cost: for instance, forgetting bad news may require making active efforts to ignore relevant facts, stopping valuable activities so as to avoid negative cues.

The timing is such that the incumbent policy-maker and voters play a simultaneous game. From the voters' point of view, there are two dimensions of uncertainty (ω and θ) and two sources of information (the external signal, or rather its recollection σ , and X). Voters choose λ in order to sustain optimism (they care about beliefs on ω) but they don't know exactly how optimistic they will ultimately be, as this depends on the policy X , which is not observed at that time.

The policy-maker selects X so as to optimally solve his tradeoff between the cost of reforming and his reelection probability (he is concerned with voter beliefs on θ). But he does not observe the realization of σ , which affects his future reputation. We assume that recollections σ are perfectly correlated across voters.¹⁸

In equilibrium, voters know the equilibrium distribution of X and the policy-maker knows the equilibrium distribution of σ and all players must respond optimally. Notice that X has to follow its correct equilibrium distribution conditional on $\omega = L$, since at the node where a voter selects λ , he has received a signal $\tilde{\sigma} = L$. Similarly, σ has to follow its equilibrium distribution conditional on $\tilde{\sigma}$, which is known to the policy-maker, as he is informed on ω .¹⁹

5 Equilibrium

Let x and y denote the probabilities that the biased policy-maker undertakes reform in states $\omega = L$ and $\omega = H$. Let $\hat{q}_{\sigma,X} \equiv \Pr(\omega = H|\sigma, X)$ and $\hat{\pi}_{\sigma,X} \equiv \Pr(\theta = C|\sigma, X)$ denote voter beliefs on ω and θ conditional on σ and X . Then a perfect Bayesian equilibrium consists of strategies (x^*, y^*) and beliefs $\hat{q}_{\sigma,X}$ and $\hat{\pi}_{\sigma,X}$ for $\sigma \in \{L, \emptyset\}$ and $X \in \{0, 1\}$ such that:

- i) x^* is solution of²⁰

¹⁸Since all voters are identical, they always choose the same optimal repression strategy when the latter is unique, which we later show.

¹⁹This is an artifact of the fact that $\tilde{\sigma}$ and ω are perfectly correlated. If there is imperfect correlation between $\tilde{\sigma}$ and ω , then we simply need to assume that the policy-maker also observes $\tilde{\sigma}$.

²⁰We use the fact that voters' recollections are perfectly correlated.

$$\max_x x(-\gamma_L^B + \delta\lambda^*\hat{\pi}_{L,1} + \delta(1-\lambda^*)\hat{\pi}_{\emptyset,1}) + (1-x)\delta(\lambda^*\hat{\pi}_{L,0} + (1-\lambda^*)\hat{\pi}_{\emptyset,0})$$

ii) y^* is solution of

$$\max_y y(-\gamma_H^B + \delta\hat{\pi}_{\emptyset,1}) + (1-y)\delta\hat{\pi}_{\emptyset,0}$$

iii) λ^* is solution of

$$\max_\lambda \lambda s E_X E_\omega u(\omega, X|\sigma = L) + (1-\lambda)s E_X E_\omega u(\omega, X|\sigma = \emptyset) - m(1-\lambda)$$

where $E_\omega u(\omega, X|\sigma) = \hat{q}_{\sigma,X}u(H, X) + (1-\hat{q}_{\sigma,X})u(L, X)$ and the distribution of X is such that $X = 1$ with probability $\pi + (1-\pi)x^*$

iv) $\hat{\pi}_{\sigma,X} = Pr(\theta = C|\sigma, X)$ and $\hat{q}_{\sigma,X} = Pr(\omega = H|\sigma, X)$ are derived from Bayes' rule given (x^*, y^*, λ^*)

Since each voter is atomistic and consequently has no hope of swinging the outcome of the election, there is no instrumental cost of being ill-informed. So the benefit of forgetting bad news is traded against the cost of repressing dissonant information m only.

Lemma 2 *In any equilibrium and for all $\lambda^*, y^* = 0$.*

Proof: *In the Appendix.*

5.1 Belief updating

Figure 2 depicts the extensive form of the game once one knows that $y^* = 0$. It is useful to derive equilibrium beliefs on ω and θ at all nodes:

- After a signal $\sigma = L$
 - $\hat{q}_{L,X} = 0$ for all X
 - $\hat{\pi}_{L,1} = \frac{\pi}{\pi+(1-\pi)x}$

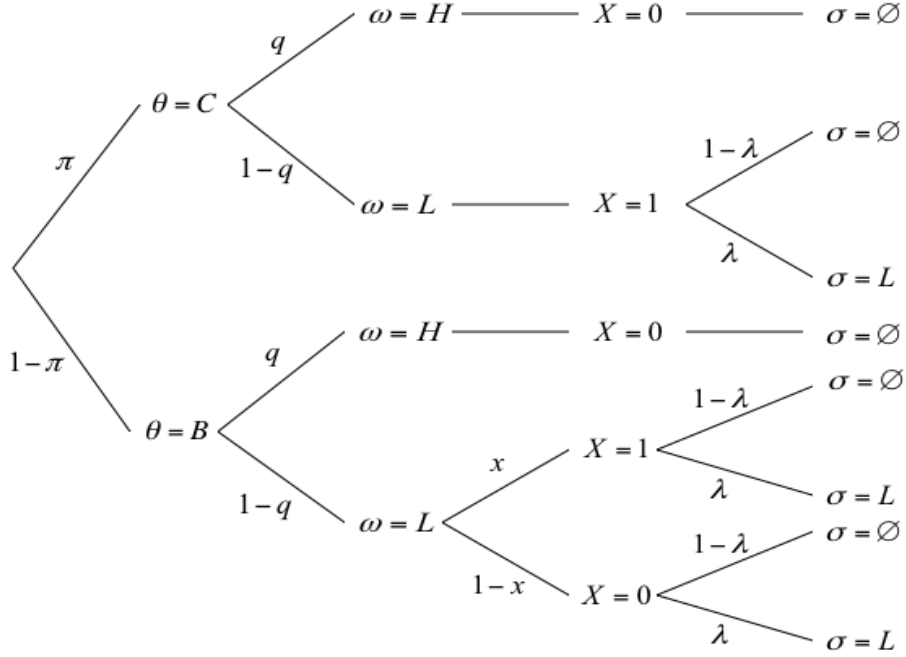


Figure 2: Extensive form of the game

$$- \hat{\pi}_{L,0} = 0$$

- After a signal $\sigma = \emptyset$

$$- \hat{q}_{\emptyset,1} = 0$$

$$- \hat{q}_{\emptyset,0} = \frac{q}{q+(1-q)(1-\pi)(1-\lambda)(1-x)}$$

$$- \hat{\pi}_{\emptyset 1} = \frac{\pi}{\pi+(1-\pi)x}$$

$$- \hat{\pi}_{\emptyset 0} = \frac{\pi q}{\pi q+(1-\pi)(q+(1-q)(1-\lambda)(1-x))}.$$

We remark that both a recollection $\sigma = L$ and the reform decision ($X = 1$) perfectly reveal $\omega = L$ and that the reputation of a policy-maker following $X = 1$ is the same regardless of σ .

5.2 Voter optimal awareness strategies

At stage 1e, voters observe σ and X and derive anticipatory utility equal to:

- $s.(a_L + b_L - c)$ after $\sigma = L$ and $X = 1$

- $s \cdot a_L$ after $\sigma = L$ and $X = 0$
- $s \cdot (a_L + b_L - c)$ after $\sigma = \emptyset$ and $X = 1$
- $s \cdot (\hat{q}_{\emptyset,0} a_H + (1 - \hat{q}_{\emptyset,0}) a_L)$ after $\sigma = \emptyset$ and $X = 0$.

When they select λ , voters do not know which policy will be implemented. However, since they know at this stage that $\omega = L$, they perceive that the probability that $X = 0$ is $(1 - \pi)(1 - x)$, so the marginal expected benefit from forgetting bad news is given by:

$$s(1 - \pi)(1 - x)\hat{q}_{\emptyset,0}(a_H - a_L) \geq 0.$$

λ^* is solution of

$$\max_{\lambda} (1 - \lambda) \{s(1 - \pi)(1 - x)\hat{q}_{\emptyset,0}(x, \lambda^*)(a_H - a_L) - m\}$$

where

$$\hat{q}_{\emptyset,0}(x, \lambda^*) = \frac{q}{q + (1 - q)(1 - \pi)(1 - \lambda^*)(1 - x)}.$$

λ^* depends on the sign of $\frac{sq(1 - \pi)(1 - x)(a_H - a_L)}{q + (1 - q)(1 - \pi)(1 - \lambda^*)(1 - x)} - m$.

This term is increasing in λ^* and q , and decreasing in x , so there is a unique interior solution to this problem $\lambda^*(x)$ such that $\lambda^*(x)$ is continuous, $\frac{\partial \lambda^*(x)}{\partial x} \geq 0$ and $\frac{\partial \lambda^*}{\partial q} \leq 0$.

Furthermore, there exists a threshold $\bar{x}(m) < 1$ such that $x > \bar{x}(m) \Rightarrow \lambda^*(x) = 1$. When x becomes large enough, the probability of a reform that reveals $\omega = L$ increases, which lowers the returns from investing in ignorance. Similarly, for π large enough, $\lambda^*(x) = 1$ for all x . Notice also that if m is low enough, then $\lambda^*(0) = 0$.

5.3 Political incentives

Given an anticipation that voters all have a recollection $\sigma = L$ with probability λ , the biased politician chooses x^* that solves

$$\max_x x \{ -\gamma_L^B + \delta \lambda \hat{\pi}_{L,1}(x^*, \lambda) + \delta (1 - \lambda) \hat{\pi}_{\emptyset,1}(x^*, \lambda) \} + (1 - x) \delta \{ \lambda \hat{\pi}_{L,0}(x^*, \lambda) + (1 - \lambda) \hat{\pi}_{\emptyset,0}(x^*, \lambda) \}$$

where

$$\begin{aligned}\hat{\pi}_{L,1}(x^*, \lambda) &= \hat{\pi}_{\emptyset,1}(x^*, \lambda) = \frac{\pi}{\pi+(1-\pi)x^*}, \\ \hat{\pi}_{L,0}(x^*, \lambda) &= 0 \text{ and } \hat{\pi}_{\emptyset 0}(x^*, \lambda) = \frac{\pi q}{q+(1-q)(1-\pi)(1-\lambda)(1-x^*)}.\end{aligned}$$

x^* depends on the sign of

$$-\gamma_L^B + \delta \frac{\pi}{\pi+(1-\pi)x^*} - \delta(1-\lambda) \frac{\pi q}{\pi q+(1-\pi)(q+(1-q)(1-\lambda)(1-x^*))}.$$

This function is decreasing in x^* and increasing in λ . Therefore, there exists a unique best response function $x^*(\lambda)$ for a given λ . This function is continuous and is such that $\frac{\partial x^*(\lambda)}{\partial \lambda} \geq 0$ and $\frac{\partial x^*(\lambda)}{\partial q} \leq 0$.

Notice that, unlike in the first section, it is now possible to have an equilibrium involving perfect discipline ($x^* = 1$). This equilibrium can be supported by out-of-equilibrium beliefs $\hat{\pi}_{L,0} = 0$.²¹ Indeed, $x^* = 1$ whenever $\delta\lambda\pi > -\gamma_L^B$.

This result that the politician is disciplined by reelection concerns contrasts with the analogous result derived in the first section. Here, the politician is disciplined only when he has a good reputation (a high π), because the possibility that voters detect bad states creates the threat of electoral punishment if he indulges his bias. Good politicians are those who have most to lose from being caught misbehaving. On the contrary, in the first section, the disciplining effect came from the fact that the policy-maker wants to enhance his reputation in order to increase his reelection probability. Such incentives are powerful enough to have a disciplining effect only on politicians with a low prior reputation.

Finally, we derive the following result:

Proposition 2 *The game admits at least one, and potentially many equilibria.*

Existence is derived from the fact that best reply functions $x^*(\lambda)$ and $\lambda^*(x)$ are both continuous on $[0, 1]$, which guarantees the existence of a fixed point. To figure out a situation involving multiple equilibria, let us imagine that $\delta\pi > -\gamma_L^B$, so $x^*(1) = 1$. Since $\lambda^*(1) = 1$, there is an equilibrium with perfect recall and efficient

²¹Notice that this is an artifact of the assumption that the signal fully reveals the state.

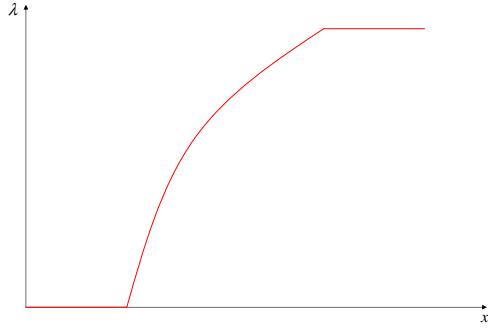


Figure 3: $\lambda^*(x)$

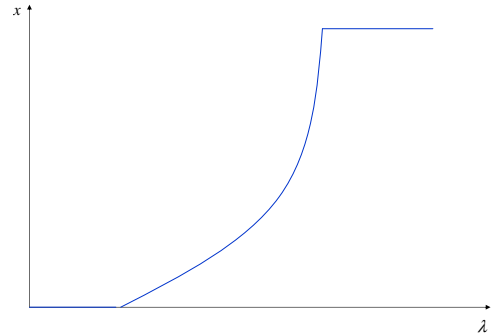


Figure 4: $x^*(\lambda)$

reform. Imagine furthermore that q is large enough so that $x^*(\lambda^*(0)) = 0$.²² If these two equilibria coexist, by continuity of the best reply functions, there must be a third equilibrium (x^*, λ^*) with $0 < x^* < 1$ and $0 < \lambda^* < 1$.

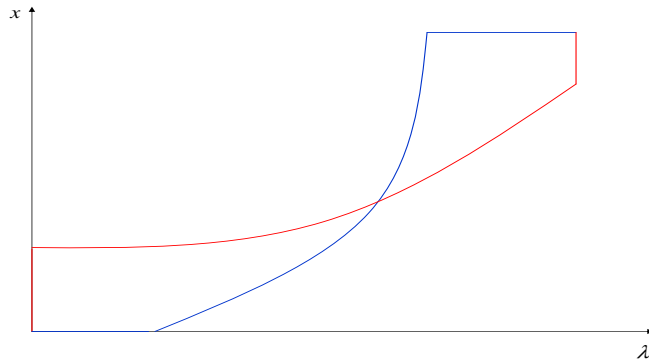


Figure 5: Three equilibria

The possible presence of multiple equilibria results from the fact that the voters' and politicians' actions are strategic complements: if voters expect a high x , the return from investing in ignorance is low since they anticipate that a reform is likely to take place, which reveals $\omega = L$ anyway. Consequently, there is less repression

²² $\frac{dx}{dq} = \frac{\partial x^*}{\partial \lambda} \frac{\partial \lambda^*}{\partial q} + \frac{\partial x^*}{\partial q} < 0$, so under very simple assumptions, we can find q large enough to get $x^*(\lambda^*(0)) = 0$. There is no reason why these equilibria may not coexist as the existence condition for the other equilibrium does not depend on q .

and voters are better informed on average. This gives the biased policy-maker an incentive to reform when necessary for fear of being caught and ousted in the next election. Conversely, if voters expect inefficient decision-making (low x), their gain from turning away undesirable information gets higher and they end up less informed. This lowers the disciplining effect of reputation on politicians.

Proposition 3 *The equilibrium is more efficient (x^* is higher) when m and δ increase and when s and q decrease.*

Since m and s only affect voter incentives in an unambiguous way, their effect on the equilibrium is clear. Similarly, δ only affects political incentives. The effect of an increase in q goes through two channels: an increase in q makes repression of bad news more valuable, since $\sigma = \emptyset$ is likely to really be good news even if the level of repression λ is high. In addition, a higher q decreases the disciplining role of reputation, because status-quo-biased politicians run little risk by indulging their bias because no reform is perceived as being the action most likely to be optimal.

The effect of an increase in π is a priori less clear, because posterior beliefs (and thus reelection probabilities) on θ are typically non-monotonic in π . However, one can show that there is at least a range of values for which a higher π improves the expected efficiency of policies. First, a higher π lowers the benefits from repressing information since the probability of a reform which reveals the truth increases anyway. Second, at least for π large enough, politicians are better disciplined when π increases, because they have more to lose when caught misbehaving.

5.4 Political turnover

Proposition 4 *The degree of voter optimism does not affect expected political turnover. However, the expected quality of the election winner is decreasing in λ .*

Proof: In any equilibrium, the *ex ante* expected probability of reelection of the incumbent is always equal to π . This is due to the facts that beliefs on θ follow a martingale and that the probability of reelection is linear in (equal to) these beliefs.

The probability that the winner of the election is congruent, π_2 , is, for given σ

and X :

$$\begin{aligned}\pi_2 &= \Pr(\hat{\pi}_{\sigma,X} \geq \tilde{\pi})\hat{\pi}_{\sigma,X} + \Pr(\hat{\pi}_{\sigma,X} < \tilde{\pi})E(\tilde{\pi}|\hat{\pi}_{\sigma,X} < \tilde{\pi}) \\ &= \hat{\pi}_{\sigma,X}^2 + \frac{(1-\hat{\pi}_{\sigma,X})(1+\hat{\pi}_{\sigma,X})}{2} = \frac{1}{2} + \frac{\hat{\pi}_{\sigma,X}^2}{2}.\end{aligned}$$

This yields, taking expectations and recalling that $\hat{\pi}_{\emptyset,1} = \hat{\pi}_{L,1}$ and that $\hat{\pi}_{L,0} = 0$:

$$\begin{aligned}E(\pi_2) &= \frac{1}{2} + [q + (1-q)(1-\pi)(1-\lambda^*)(1-x^*)] \frac{\hat{\pi}_{\emptyset,0}^2}{2} + (1-q)[\pi + (1-\pi)x^*] \frac{\hat{\pi}_{\sigma,1}^2}{2} \\ &= \frac{1}{2} \left[1 + \frac{\pi^2 q^2}{q+(1-q)(1-\pi)(1-\lambda^*)(1-x^*)} + \frac{(1-q)\pi^2}{\pi+(1-\pi)x^*} \right].\end{aligned}$$

which is decreasing in λ^* since $\frac{\partial x^*(\lambda)}{\partial \lambda} \geq 0$. □

The intuition for this result is simple: as voters are less informed in an equilibrium with lower λ^* , they are less able to screen politicians and are consequently more likely to reelect a politician of lower quality.

5.5 Welfare

5.5.1 Voter welfare

Let us compare the expected welfare of voters under different equilibria. Voter welfare is composed of 4 terms, each of which depends on the equilibrium that one considers: period 1 utility, period 2 utility, savoring of period 1 utility and the cost of repression. Period 1 utility depends on the equilibrium directly through x^* while period 2 utility depends on the equilibrium through $E(\pi_2)$, the expected quality of the future incumbent. The only term that could be higher in an equilibrium involving more repression and thus less reform is the savoring term, but since belief form a martingale, we have $E_{\sigma,X}[\hat{q}_{\sigma,X}] = q$ so that expected savoring utility cannot be larger in a equilibrium with less reform.²³ We formally show in the Appendix that voters are always better off under an equilibrium with higher x^* and higher λ^* . The reason why they may fail to reach such a good equilibrium *ex post* is that, once they learn bad news about ω , they have an incentive to forget it, which creates *an externality across information states* (Benabou and Tirole): in state $\omega = H$ voters

²³One has to take into account that more reform has a direct impact on savoring since the period 1 payoff is higher.

are victims of their own tendency to repress bad news in state $\omega = L$, which makes good news less reliable.

5.5.2 Policy-maker's welfare

As regards the policy-maker, we may expect from the result of the previous section that they prefer an equilibrium with low λ^* which goes along with more voter optimism. This is actually true in state $\omega = L$ but is wrong when $\omega = H$ because of the aforementioned externality. To see this, let us write expected payments as a function of λ^* :

$$\tilde{U}_C(H) = \tilde{U}_B(H) = \delta \hat{\pi}_{\emptyset,0} = \delta \frac{\pi q}{q+(1-q)(1-\pi)(1-x^*(\lambda^*))},$$

Since $\frac{\partial x^*}{\partial \lambda} \geq 0$, $\tilde{U}_\theta(H)$ is increasing in λ^* .

$$\tilde{U}_C(L) = -\gamma_L^C + \delta \hat{\pi}_{\sigma,1} = -\gamma_L^C + \delta \frac{\pi}{\pi+(1-\pi)x^*(\lambda^*)},$$

$$\tilde{U}_B(L) = -\gamma_L^B + \delta \frac{\pi}{\pi+(1-\pi)x^*(\lambda^*)}$$

if λ^* is large enough to have $x^* > 0$ and

$$\tilde{U}_B(L) = \delta(1 - \lambda^*) \frac{\pi q}{q+(1-q)(1-\pi)(1-\lambda^*)}$$

if λ^* is low enough to have $x^* = 0$.

Since in that case we have

$$\delta(1 - \lambda^*) \frac{\pi q}{q+(1-q)(1-\pi)(1-\lambda^*)} > -\gamma_L^B + \delta > -\gamma_L^B + \delta \frac{\pi}{\pi+(1-\pi)x^*(\lambda^*)},$$

$\tilde{U}_B(L)$ is decreasing in λ^* . So is $\tilde{U}_B(L)$.

In contrast with the first section, in which we only considered the preferred q for politicians, voter optimism here comes at a cost. It is no longer possible for voters to disregard information that $\omega = L$ without casting doubt on the reliability of $\sigma = \emptyset$, because voters make Bayesian inferences and do not take no recollection at face value. The higher λ , the more observing $\sigma = \emptyset$ really is good news. From the politician's perspective, an increase in λ has the following effect: in bad states, better information increases the probability of getting caught failing to implement a

reform. Therefore, there is a clear disciplining effect for the biased politician, which comes at a cost, since he can less easily indulge his bias. This also has a cost for the congruent type, whose reelection probability after reform decreases because his biased counterpart is known to be better disciplined. Politicians thus clearly prefer voters to have strong repression strategies whenever $\omega = L$. However, in state H , both types of politicians never reform. In that case, better voter information is good for politicians. There are actually two effects: a higher λ actually increases the probability perceived by voters that the state is H (credibility of the signal), which increases the probability of reelection after $X = 0$, everything else being equal; furthermore, a higher λ implies a higher x^* , so the biased politician would be disciplined were the state to be $\omega = L$, which increases his reputation from not reforming. While it is ambiguous whether policy-makers prefer voters to be *ex post* optimistic (lower λ^*), it is clear that they prefer voters to be *ex ante* more optimistic (higher q), as in section 1.

6 Discussion and possible extensions

6.1 Constitutional design

Starting from Barro [3], the literature in political economy has stressed extensively the disciplining role played by elections in representative democracy. Career concerns make politicians accountable for their behavior to the extent that policy-makers foster their reelection prospects by implementing socially desirable policies. However, this requires voters to have correct information on which is the right policy. As soon as information is imperfect, politicians have some leeway to indulge their bias. Here, voters do not always observe *ex post* whether the chosen policy was optimal and the quality of voter information is endogenous. In that context, we show that the disciplining role played by elections has less bite when voters manipulate their beliefs in a self-serving way. In a similar vein, we could have considered a model in which reelection concerns provide incentives to pander to public opinion, as in Canes-Wrone *et al.* [13] or in Maskin and Tirole [26]. In such a framework, we

would derive the analogous result that incentives to pander to public opinion increase when voters have less precise information. In the old debate on the best democratic organization among direct democracy, representative democracy and independent judicial power, our result provides a case for judicial power, since both direct and representative democracy become less efficient under manipulation of beliefs. In that light, it is interesting to notice that politicians often proceed in roundabout ways by delegating authority to some independent or supranational institution (like the European Union), and then blame that so as to cater to the electorate. Incentives for such strategic delegation constitutes a promising avenue for future research.

6.2 Instrumental value of information

For simplicity, we have assumed in the model that information has no instrumental value for voters. Better information would allow voters to better screen politicians, but since each voter is atomistic and has no hope of swinging the outcome of the election, he typically free-rides on the information of others. One way to avoid this issue would be to assume that λ is the decision of a medium which provides information to the whole electorate and has the same preferences over beliefs as the representative voter. This medium thus would have incentives to manipulate beliefs exactly in the same way as voters, but would have to take into account the impact of bad news repression on the electoral outcome.

Alternatively, another interesting extension would be to endogeneize the cost of ignorance in such a way that it varies with the expected efficiency of policies. For instance, in a model of savings, ignoring fear-inducing information that one should put aside precautionary savings has an instrumental cost, but this cost endogenously depends on the expected efficiency of policies regarding public insurance or public retirement schemes.

6.3 Political communication: soothing politics

Another interesting avenue for future research concerns political communication. Our results indicate that policy-makers are better off when facing optimistic voters,

although this might come at some cost whenever optimism is a by-product of selective exposure. In our simple model, the only way politicians can try to influence voter beliefs is through political actions. In a static setting, political actions are driven by the sole tradeoff between static preferences and reelection concerns, so the desire to soothe the electorate does not affect decision-making. We can think of two kinds of extensions to allow politicians to influence voter beliefs.

One would consist of introducing a communication stage before the political game. The politician could for instance send a message about the state of the world. Alternatively, and more in line with the modeling of this paper, the politician, even if he cannot prevent voters from learning the true state, could try to influence voter incentives to forget information by affecting m . m stands for instrumental or psychological costs of repressing information, which can be affected by the public salience of information. Extensive public communication renders repression of bad news harder: it seems difficult to forget news about climate change, terror attacks or swine flu because these topics appear constantly in the headlines. Political scientists have indeed underlined for a long time that a policy-maker who advertises the reforms he plans to implement a lot is much more likely to be successful. The question raised in this paper concerns the incentives of politicians to behave in a pedagogic way, i.e. to discourage voters from turning a blind eye to depressing information. The answer is ambiguous, as increasing m decreases average optimism in state L but increases optimism in state H . This would clearly raise signaling issues if the politician is known to have private information on the state at the time at which he communicates. In the same way as voters are trapped, politicians might want to commit to preventing voters from ignoring bad news, but may fail to behave in a pedagogic way as soon as bad news actually appears (externality across states).

6.4 Dynamics

The second way we could allow policy-makers to influence voter optimism is to introduce dynamics in the model. In a repeated version of the game, the continuation value of being in office in each period is increasing in voters' perception of the probability that the state is $\omega = H$. Assuming that there is serial correlation of

ω ,²⁴ the politician should consider that undertaking reform on the one hand boosts his reelection probability but lowers the continuation value of being reelected on the other hand, as voters become pessimistic upon observing past reforms and politicians unambiguously prefer voters to be optimistic in the future. Consequently, the result that multiple equilibria coexist should be robust to the introduction of dynamics: in one equilibrium, politicians choose soothing policies, which creates incentives for voters to protect their optimistic beliefs and in turn lowers the disciplining effect of elections; in another equilibrium, policy-makers choose informative policies, which is rewarding because voters have correct information.²⁵ This raises the question of whether we should observe convergence towards a unique equilibrium. Intuitively, it is clear that learning occurs as time goes by because (i) repression of information by voters may not be complete, (ii) the quality of incumbents on average improves over time, (iii) policies convey information even when undertaken by biased politicians. However, in a soothing equilibrium, learning is necessarily slower because (i) repression is more intense, (ii) screening of politicians is less efficient, (iii) political decisions convey less information. This captures in particular the idea that policy-makers often let the situation deteriorate until some information accrues that forces them to address the problem. Another interesting question is whether gradualism should be preferred to “big bang” reforms.²⁶ The dynamics of the model suggest that it may take time for ideas to become accepted and that current reforms increase the acceptability of future reforms. Consequently, on issues involving anxiety or ideology, for which belief manipulation is expected to be a concern, we suggest that reforms should be conducted in steps, so that ideas are embedded gradually.

²⁴Serial correlation would also give voters a motive to repress information on ω even if payoffs are not delayed, since a signal on the current state conveys information about future payoffs.

²⁵The possible persistence of multiple equilibrium outcomes and beliefs is reminiscent of papers by Benabou and Tirole [6] and Dessi [19], in which belief manipulation may result in different ideologies persisting over time.

²⁶For a general discussion on this issue, see Roland [30].

7 Conclusion

Politicians often must take decisions based on private information that may worry the electorate. Indeed, political reforms often convey news that times are hard and that future prospects are dim. We construct a political agency model in which voters learn information on policy-relevant variables from two sources: an external signal and the political decision itself. As they have a desire for optimistic beliefs, voters may want to repress worrying news coming from the external signal. This may create inefficient decision-making because reelection concerns have less disciplining power over politicians facing worse informed voters. However, voters also learn relevant information from political decisions and the quality of what they learn increases as politicians select more efficient policies. Consequently, the return from investing in ignorance is lower when policies are expected to be efficient. On the contrary, voter incentives to ignore information increase when they expect inefficient policies, because the latter are unlikely to convey undesirable information. The model thus exhibits strategic complementarities between voters' and policy-makers' decisions, which lead to multiple equilibria. In the inefficient equilibrium, insufficient reform is both a by-product and a cause of voters' underlying optimism. This suggests that, in a dynamic framework, we should expect inaccurate beliefs to persist over time, as soothing policies are likely to be pervasive.

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Appendix

Proof of Proposition 1

Let us recall that the marginal incentive to select $X = 0$ in state $\omega = L$ equals

$$\delta[\hat{\pi}_0(x^*) - \hat{\pi}_1(x^*)] - \gamma_L^B$$

Uniqueness is derived from the fact that $\hat{\pi}_0(x^*) - \hat{\pi}_1(x^*)$ is increasing in x^* .

$x^* = 1$ is impossible because $\hat{\pi}_1(1) = \hat{\pi}_0(1) = \pi$ and $\gamma_L^B > 0$.

$x^* = 0$ is an equilibrium whenever

$$\gamma_L^B - \delta \frac{1 - \pi}{q + (1 - q)(1 - \pi)} > 0.$$

The latter term is increasing in π . Recalling that $\delta > \gamma_L^B$ by assumption, it is positive for $\pi = 1$ and negative for $\pi = 0$. \square

$\hat{\pi}_1(x^*)$ is independent of q because a reform $X = 1$ perfectly identifies the state as being $\omega = L$. However, $\hat{\pi}_0(x^*)$ depends on q since $X = 0$ can arise even in state $\omega = L$. It is straightforward to show that $\hat{\pi}_0(x^*)$ is increasing in q .

Overall, the marginal reputational gain from reforming $\hat{\pi}_1(x^*) - \hat{\pi}_0(x^*)$ is decreasing in q , which proves the result. \square

Proof of Lemma 2

Since a congruent politician always reforms in state L , $\hat{\pi}_{L,0} = 0$ as long as $x^* < 1$. In an equilibrium in which $x^* = 1$, observing $\sigma = L$ and $X = 0$ is impossible on the equilibrium path. Hence Bayes' rule cannot apply. In this case, we consider out-of-equilibrium beliefs $\hat{\pi}_{L,0} = 0$.

The marginal incentive to reform for the biased type is then

- $-\gamma_H^B + \delta\hat{\pi}_{\emptyset,1} - \delta\hat{\pi}_{\emptyset,0}$ in state H
- $-\gamma_L^B + \delta\lambda\hat{\pi}_{L,1} + \delta(1 - \lambda)\hat{\pi}_{\emptyset,1} - (1 - \lambda)\delta\hat{\pi}_{\emptyset,0}$ in state L ,

where

- $\hat{\pi}_{L,1} = \frac{\pi}{\pi + (1 - \pi)x}$

- $\hat{\pi}_{\emptyset 1} = \frac{\pi(1-q)(1-\lambda)}{\pi(1-q)(1-\lambda) + (1-\pi)(qy + (1-q)(1-\lambda)x)}$
- $\hat{\pi}_{\emptyset 0} = \frac{\pi q}{\pi q + (1-\pi)(q(1-y) + (1-q)(1-\lambda)(1-x))}$

The difference between the marginal benefit of reform in states H and L equals

$$\gamma_L^B - \gamma_H^B + \delta\lambda[-\hat{\pi}_{L,1} + \hat{\pi}_{\emptyset,1} - \hat{\pi}_{\emptyset,0}].$$

Since

$$\hat{\pi}_{\emptyset 1} = \frac{\pi(1-q)(1-\lambda)}{\pi(1-q)(1-\lambda) + (1-\pi)(qy + (1-q)(1-\lambda)x)}$$

is decreasing in λ , we derive that

$$\hat{\pi}_{\emptyset 1} \leq \frac{\pi(1-q)}{\pi(1-q) + (1-\pi)(qy + (1-q)x)}.$$

$$\frac{\pi(1-q)}{\pi(1-q) + (1-\pi)(qy + (1-q)x)} \leq \frac{\pi}{\pi + (1-\pi)x} \Rightarrow \gamma_L^B - \gamma_H^B + \delta\lambda[-\hat{\pi}_{L,1} + \hat{\pi}_{\emptyset,1} - \hat{\pi}_{\emptyset,0}] < 0.$$

This implies that the equilibrium is monotonic: $y(\lambda) \leq x(\lambda)$.

Furthermore, $y(\lambda) > 0 \Rightarrow x(\lambda) = 1$ and $x(\lambda) < 1 \Rightarrow y(\lambda) = 0$.

Assume that $y(\lambda) > 0$ for some λ . This implies that $x(\lambda) = 1$, so $\hat{\pi}_{\emptyset 0} = \pi \geq \hat{\pi}_{\emptyset 0}$.

$\gamma_H^B < 0$ so $y(\lambda) > 0$ cannot be optimal. A contradiction. \square

Voter welfare

In this section, we compute voter welfare in a given equilibrium (x^*, λ^*) and show that welfare is always higher for higher values of λ^* and x^* .

Given an equilibrium (x^*, λ^*) ,

- total expected period 1 utility reads

$$qa_H + (1-q)(\pi + (1-\pi)x^*)(a_L + b_L - c) + (1-q)(1-\pi)(1-x^*)a_L,$$

which is decreasing in λ^* , since x^* decreases in λ^*

- total expected period 2 utility reads

$$qa_H + (1-q)a_L + E(\pi_2)(1-q)(b_L - c),$$

which is decreasing in λ^* since $E(\pi_2)$ decreases in λ^*

- total savoring utility reads

$$\begin{aligned} & sq[\hat{q}_{\emptyset,0}a_H + (1 - \hat{q}_{\emptyset,0})a_L] + s(1 - q)(\pi + (1 - \pi)x^*)(a_L + b_L - c) \\ & + s(1 - q)(1 - \pi)(1 - x^*)\lambda^*a_L + s(1 - q)(1 - \pi)(1 - x^*)(1 - \lambda^*)[\hat{q}_{\emptyset,0}a_H + (1 - \hat{q}_{\emptyset,0})a_L] \\ & = sa_L + s(1 - q)(\pi + (1 - \pi)x^*)(b_L - c) + sq(a_H - a_L) \end{aligned}$$

which is also decreasing in λ^*

- total repression cost $m(1 - \lambda^*)$ is also decreasing in λ^*

Total voter welfare equals to the sum of these four terms. Since they are all increasing in the efficiency of the equilibrium x^* , voter welfare is unambiguously higher in an equilibrium involving less repression and more political discipline.