Competence and Advice

Anna Denisenko[*] Catherine Hafer[†] Dimitri Landa[‡]

June 15, 2022

DRAFT: Comments Welcome

Abstract

Introduction

Political lives and reputations of leaders are inevitably defined by the outcomes of policies they choose, yet those policies are rarely a product of the leaders' *sui generis* judgments. Instead, they are deeply influenced by the actions and judgments of people that the leaders must, through choice or necessity, rely on for advice. It is tempting to assert, in the light of this – as historians and political biographers often do – that the leaders are, thus, only as good as their advisors. But the apparent obviousness of this claim obscures fundamental strategic complexities at the core of the leader-advisor relationship.

We develop a theory of policy advice that focuses on the connection between two central elements of that relationship – advisor competence and the quality of advice that the leader may expect – and call into question some of the strongly held intuitions about what makes for a good advisor and about the politics of policy-making more broadly.

Do more competent advisors give more informative advice? We describe important tensions between competence and informative advice and show that, while the positive answer may sometimes hold up, in a wide class of substantively important circumstances, the answer is often negative. Turning to the level of institutional analysis, how might institutional tools available to the leaders affect the ultimate quality of advice they may expect to receive? The theory that we develop seeks to shed light on these questions.

[*]Ph.D. student, Wilf Family Department of Politics, NYU, e-mail: ad4205@nyu.edu
[†]Associate Professor, Wilf Family Department of Politics, NYU, e-mail: catherine.hafer@nyu.edu
[‡]Professor, Wilf Family Department of Politics, NYU, e-mail: dimitri.landa@nyu.edu

We proceed by constructing a model of strategic communication between leaders and their advisors. The immediate policy-making setting that exemplifies the agency problems challenging this communication is the relationship between the bureaucracy and elected executives. Bureaucrats, who tend to enjoy superior information, also often have preferences that suggest institutionalized inertia – an interest in maintaining status quo. Lawrence J. Peter (of the Peter Principle) puts it in a characteristically flip fashion: "Bureaucracy defends the status quo long past the time when the quo has lost its status." Huq and Ginsburg (2018), who view this conservatism as a guarantor of political stability, describe it also as essentially symmetric: "Just as bureaucracy may make progressive reform difficult to achieve, it also slows down rapid shifts away from liberal democratic norms" (p. 129).

The bureaucracies' status-quo bias need not imply their primitive conservativism. As a rule, bureaucrats have long time horizons and so are apt to discount the value of responding to what may be short-term trends. In contrast, the time horizons of elected officials tend to be short, and they prefer to match the policy to the immediate trends, discounting longer-term implications.

In our model, an advisor, who, like the bureaucrats in this description, prefers maintaining the status-quo policy and has access to superior information, chooses whether to reveal to the leader her privately observed signal (i.e., send a "verifiable message") about the state of the world – a signal relevant to the leader's choice of policy. Assuming the advisor shares her signal, the leader updates more strongly if the advisor is commonly known to be more competent and, conditional on such an update, shifts policy farther. Given this expectation and the gap in most preferred policies between the leader and her advisor, a more competent advisor stands to lose more from revealing her signal than does a less competent one. In general circumstances, the less competent advisors will, thus, have stronger incentives to reveal their information to the leader than will more competent ones. The leader, then, faces a trade-off between the quality of advice she receives and the likelihood of receiving advice.

We describe conditions that influence the advisors' incentives to share information as well as conditions that determine when leaders may be better off having as their advisors agents with lower competence, even if that means that the advice they receive is less reliable. Of particular interest is also how the bias that the leader may have in favor of right- vs. left- ward policies affects the advisor's incentives to offer informative advice. We show that leader's bias leads to concentration of informative advice on the opposite side of the leader's policy bias, as well as to a widening of the revelation region for the advisors. We also describe a condition under which the biased leader will prefer to have a more competent advisor than an unbiased leader.

The rest of the paper proceeds as follows. Following a brief review of the prior literature, we develop a general formulation of the trade-off between advisor competence (quality of information available to the advisor) and the strategically supportable quantity of advice. We then study a model with quadratic utilities which, we show, generates this trade-off in equilibrium, first analyzing a model with a leader who has no bias in either direction away from the status quo, and then with a leader who has such a bias.

Connection to the Literature

The relationship between leaders and their advisors is critically affected by three sources of agency problems: (1) advisors have their own policy preferences; (2) they have informational advantage over the leaders – the key reason for leaders' need of their services, but, simultaneously, also an impediment to the leaders' ability to evaluate the advice; and (3) advisors may have differing abilities to obtain information, which affects the quality of advice they could give to the leaders. The primary focus of the previous work has been the relationship between the first two of these three factors – difference between leaders' and advisors' preferences and the advisors' informational advantage. An important review of this literature is Sobel (2013).

Information revelation through advice, including from multiple senders, has been a focus of substantial cheap-talk literature in political economy, including Gilligan and Krehbiel (1989), Austen-Smith (1990), Austen-Smith (1993), and Battaglini (2002).

In the verifiable messages (persuasion) games literature on advice to which the current model belongs, an important early paper is Shin (1994), which shows that the unraveling in the event of "no news" fails when the advisor's knowledge is imperfect; see also Wolinsky (2003). Dziuda (2011) studies a setting where the fixed expert's preferences are different and unknown to the decision-maker. She shows that there is never full disclosure, but the expert offers pros and cons for the advocated alternative in order to pull with the honest/non-strategic type. Che and Kartik (2009) investigate a situation in which the decision-maker and the advisor are assumed to have identical preferences, but different priors, and the advisor invests effort into acquiring information. They show that the decision-maker prefers an advisor whose prior beliefs are different than her own to incentivize the advisor to acquire information in order to persuade the decision-maker.

Bhattacharya and Mukherjee (2013) and, extending their model, Bhattacharya, Goltsman, and Mukherjee (2018) study verifiable advice from a panel of experts who may vary in quality and preference. Unlike in our model, the focus in these studies is on the optimal extent of conflict between multiple experts, who are assumed to observe the state directly with some probability (their quality). Bhattacharya and Mukherjee (2013) identify the possibility that improving advisor's quality can lower the decision-maker's utility. A necessary condition for such an outcome in their model is that the leader's default policy in the absence of revelation be sensitive to advisor quality. In contrast, in our model with an unbiased leader, the optimal default policy is constant in advisor quality, and the impact of the latter is, rather, channelled through the quality of information provided, allowing us to get a sharper characterization of the conditions under which the leader may prefer a lower-quality advisor and more fully examine its implications.

Unlike the above studies, our focus is on the strategic implications of the relationship between the advisors' informational advantage over leaders and the quality of advice they could give to the leaders. A standard intuition, captured in a number of political economy models, is based on the career-concerns rationale: the agent wants to appear well-informed (competent). See Ottaviani and Sørensen (2006) for an explicit analysis of the effects of this motivation. By contrast, in our model, the advisor's incentives are such that being well-informed can make it less likely that the advisor is selected, and, conditional on being selected, is all downside.

Several papers study mechanisms, different from the one we analyze, suggesting a possible downside of the advisor/agent competence. Egorov and Sonin (2011) explore the competence-loyalty trade-off in the relationship between leaders (dictators) and advisors (veziers). In their model, the higher is the Vizier's competence, the more confident he is that his betrayal of the Dictator will lead to the Enemy's victory, and, thus, the costlier it is for the Dictator to enforce the loyalty of more qualified viziers against the Enemy's offer of a bribe to the Vezier. The Dictator, thus, faces a loyalty-competence trade-off with respect to the Vezier. See also Terai and Glazer (2018). Sobel (1993) shows that when the agent is uninformed, he might exert more effort to achieve an outcome than a better informed agent, leading to the possibility of the former being more attractive to the principals. Gailmard and Patty (2007) model bureaucratic competence as an exogenous cost of acquiring expertise and show that when cost is too high, the legislature does not reward the expertise acquisition.

There is a growing body of empirical work on competence-loyalty trade-offs. This includes Abbott et al. (2020), who informally describe a conflict between competence and control faced by the governors: while the governors are assumed to prefers to work with highly competent intermediaries, the more competent the intermediary is, the more likely he to use policy benefits to free himself of the governor's oversight. Other papers in this literature, focusing especially on Chinese politics, include Bai and Zhou (2019), Reuter and Robertson (2012), Shih, Adolph, and Liu (2012), and Xi (2018).

The General Environment

We analyze a strategic interaction between a Leader (he) and an Advisor (she) of known competence. The Leader wishes to choose an action that will match a state of the world, which he does not directly observe. Instead, the Leader may be able to obtain information about the state from his Advisor, whose competence determines the informativeness of the signal about the state of the world that the Advisor privately observes. The timeline of the game is as follows.

1. Nature determines the state of the world $w \in \mathbf{R}$, where w is a draw from a normal distribution $N(\mu, 1/q)$ parameterized by mean μ and precision q, both of which are known.

2. The Advisor of known competence θ observes signal s^A about the state of the world w. With probability ρ, the signal is informative, $s^A = w + \varepsilon$. The variable ε represents random noise drawn from a normal distribution with mean 0 and precision θ (s.t. $\theta \in \mathbf{R}^+$), $\varepsilon \sim N(0, 1/\theta)$. With complementary probability $(1-\rho)$, the Advisor observes nothing: $s^A = \varnothing$.

3. The Advisor chooses which message m to send to the Leaders, $m \in \{s^A, \varnothing\}$.

4. The Leader observes message m and decides which policy $a \in \mathbf{R}$ to implement.

We denote the Leader's and the Advisor's preferences by $U_L(\cdot)$ and $U_A(\cdot)$ correspondingly. We assume that both the Leader and the Advisor have single-peaked preferences. The Leader wants to match the state of the world,[1] competence of the a while the Advisor wishes to sustain the status-quo.

Following the Advisor's message m, the Leader forms posterior belief $\mu_1(w|m, \mu, \theta)$, where $\mu_1(\cdot)$ denotes the probability that the state of the world is w conditional on the message m the Leader observes and the competence of the Advisor θ. The Leader's utility depends on

[1] We focus on this formulation here in order to cleanly state the trade-off between quality (competence) of advisors and their willingness to reveal their privately held information. Below, we will also consider the specification in which the Leader has a bias in favor of moving a policy in one as opposed to another direction.

the state of the world and the policy a he chooses. The Leader chooses $a^*(m, \theta)$ such that it maximizes his expected utility

$$a^*(m, \theta) = \arg\max_a \int U_L(a, w) d\mu_1(w|m, \theta). \tag{1}$$

The Advisor's utility depends on the policy a that the Leader implements and on whether or not the signal she sends is informative. We assume that every Advisor values office and receives a finite and positive utility Ψ while in office. We assume, further, that if the Advisor does not send the informative signal (i.e. if $m = \varnothing$), the Advisor is immediately replaced. By way of justification, one might imagine a game in which the Leader chooses his Advisor out of pool of candidates of known competence. If the Leader can replace an Advisor with another one of the same competence, it becomes sequentially rational to dismiss the Advisor for failing to provide an informative message or to commit to rewarding the Advisor who does send such a message.

The Advisor gets utility

$$U_A(a, m) = \begin{cases} u_A(a), & if\ m = \varnothing, \\ u_A(a) + \Psi, & \text{else.} \end{cases} \tag{2}$$

The Advisor sends message $m^*(\theta)$ that maximizes

$$m^*(\theta) = \arg\max_{m \in \{s, \varnothing\}} U_A(a^*(m, \theta)). \tag{3}$$

Finally, the Leader selects the policy. We deliberately assume that the Leader derives no direct utility from the Advisor's competence; yet, the competence indirectly affects the Leader as it alters signal informativeness.

The solution concept is Perfect Bayesian Equilibrium, requiring satisfaction of conditions (1) and (3), as well as efficient posterior $\mu_1(\cdot)$.

The Trade-off Between Competence and Advice

Impact of Competence on Revelation

When the Leader observes the informative signal ($\mathbf{s} \in I^L$), the Leader adopts policy equal to mean of the posterior distribution $a = \frac{q\mu + \theta s}{\theta + q} = \mu + (s - \mu)\frac{\theta}{q + \theta}$. Otherwise, he implements a default policy ($a = d$) in the absence of verifiable information.

The Advisor's incentives to share information with the Leader, given the Leader's anticipated policy response, vary with the Advisor's competence. The informed Advisor's utility from revealing her information ($m = s$) is

$$u_A(\mu + (s - \mu)\frac{\theta}{q + \theta}) + \Psi.$$

Alternatively, her utility from concealing the information is

$$u_A(d).$$

The Advisor reveals her information if and only if

$$u_A(\mu + (s - \mu)\frac{\theta}{q + \theta}) + \Psi > u_A(d). \tag{4}$$

The Advisor's strategy is a mapping from the signal she observes into decision to reveal information or not. Note that the Advisor's strategy does not depend on her probability of observing information ρ. Because the Advisor wishes for policy to match the status quo, her utility $u_A(x)$ decreases in $|x - \mu|$. She follows a threshold strategy and reveals a signal if and only if it belongs to an interval $(\underline{\hat{s}}(\theta), \overline{\hat{s}}(\theta))$, where $\underline{\hat{s}}(\cdot) \leq \mu \leq \overline{\hat{s}}(\cdot)$.

Lemma 1. *The lowest and highest signals that the Advisor reveals to the Leader,* $\underline{\hat{s}}(\theta)$ *and* $\overline{\hat{s}}(\theta)$*, are symmetric around the ex ante expected value if the state of the world,* μ*.*

Importantly, because $u_A(\mu + (s - \mu)\frac{1}{q/\theta + 1})$ decreases in θ for every s such that $s < \mu$ and increases in θ for $s > \mu$, $\underline{\hat{s}}(\theta)$ increases in θ, and $\overline{\hat{s}}(\theta)$ decreases in θ. Therefore, $r(\theta) \equiv Pr[s \in (\underline{\hat{s}}(\theta), \overline{\hat{s}}(\theta))]$ decreases in θ : more competent Advisors are less likely to reveal the information that they observe.

Proposition 1.

1. *The Advisor's incentives to send an informative message to the Leader decrease in the Advisor's competence (θ) and increase in the precision of the prior (q).*

2. *The Advisor's incentives to send an informative message to the Leader increase in the Advisor's valuation of office (Ψ).*

The intuition behind the first part of Proposition 1 is straightforward. The final policy the Leader adopts is a weighted combination of information he knows (his prior beliefs about the state of the world) and information he learns from his Advisor. The higher the Advisor's competence, the more the Leader relies on the informative message. Therefore, when the signal the Advisor observes differs from her most preferred policy, her incentive to reveal it will decrease with her competence, as an informative message from a more competent

Advisor increases the distance between the final policy and the status-quo policy, which the Advisor prefers. For the same reason, the more precise is the prior, the more likely is the Advisor to reveal her signal to the Leader: the higher is q, the less the Leader updates based on the message he receives.

The second part of Proposition 1 highlights the impact of the the benefit of retaining her office (Ψ) on the Advisor's decision to reveal her signal. The more highly the Advisor values her position, the higher is the opportunity cost of concealing information from the Leader, and, thus, the more likely is the Advisor to send an informative message.

Preference for [in]Competence

This section focuses on the expected impact of the Advisor's competence on the Leader's utility. To provide a general intuition for the Leader's preference for a less than maximally competent agent, we abstract away from the exact functional forms of the utilities and signal distributions. Consistent with the results above, the Advisor sends an informative signal to the Leader with probability $r(\theta)$ and sends an uninformative signal with complementary probability $(1 - r(\theta))$, where $r(\theta)$ depends on Advisor's competence. When the Leader observes the informative signal, he gets the expected utility $\alpha(\theta)$. When the Leader does not, he gets expected utility $\beta(\theta) < \alpha(\theta)$.

The Leader's expected utility is

$$E[U_L(\theta)] = r(\theta) \times \alpha(\theta) + (1 - r(\theta)) \times \beta(\theta).$$

Note that under certain conditions, the Leader prefers a less competent Advisor over a more competent one. His expected utility decreases in θ when

$$\frac{\partial E[U_L(\theta)]}{\partial \theta} = r'(\theta) \times (\alpha(\theta) - \beta(\theta)) + r(\theta) \times \alpha'(\theta) + (1 - r(\theta)) \times \beta'(\theta) < 0, \tag{5}$$

and increases in θ otherwise.

The next proposition follows from equation 5:

Proposition 2. *The Leader's utility decreases in the Advisor's competence when*

$$r'(\theta)(\alpha(\theta) - \beta(\theta)) < -r(\theta) \times \alpha'(\theta) - (1 - r(\theta)) \times \beta'(\theta), \tag{6}$$

and increases in her competence otherwise.

This proposition holds that the Leader prefers a less competent Advisor to a more competent one when the marginal utility gained from acquiring information is smaller than the marginal loss of information per se multiplied by its importance to the Leader.

Of course, the question of whether these conditions are consistent with a properly micro-founded agency model remains open. In the next section, we describe such a model with quadratic utilities and show when such conditions are supported in the context of that model.

Quadratic Utilities Model

We begin with a model in which, like in the general setting described above, the Leader has no prior bias in favor moving the policy in one rather than in another direction from the mean. In the following section, we, then, study the model in which the Leader has such a bias. Throughout, for simplicity, we normalize the signal distribution to have mean $\mu = 0$.

Unbiased Leader

Incorporating the Leader's assumed replacement strategy, the Advisor gets utility

$$U_A(m|s,\theta) = \begin{cases} -(a-0)^2 & if\ m = \varnothing, \\ -(a-0)^2 + \Psi & \text{else.} \end{cases} \tag{7}$$

The Leader gets utility

$$U_L(a|m,\theta) = -(a-w)^2. \tag{8}$$

The Leader acts last. He chooses action $a^*(m) = \frac{m}{1+q/\theta}$ when he observes an informative message $m = s$ and chooses action $a^*(m = \varnothing) = d(\theta)$ otherwise. The Advisor sends an informative message when she observes a signal s s.t.

$$-\sqrt{\Psi + d(\theta)^2} \times (1 + \frac{q}{\theta}) < s < \sqrt{\Psi + d(\theta)^2} \times (1 + \frac{q}{\theta}) \equiv \hat{s}(\theta, \cdot) \tag{9}$$

and sends no informative message otherwise. As in the generalized setting, the Advisor's incentives to reveal her signal to the Leader decrease with her competence. Note, that in the absence of informative message, the Leader's optimal strategy is to implement policy $a^*(m = \varnothing) = 0$, as the Advisor's strategy is symmetric around 0.

Figure 1 shows the thresholds $\pm\hat{s}(\theta, \cdot)$ as a function of the Advisor's competence θ. The shaded area depicts signals that an Advisor of competence θ reveals to the Leader. The higher is the Advisor's competence, the smaller the range of informative messages the Advisor will send to the Leader.

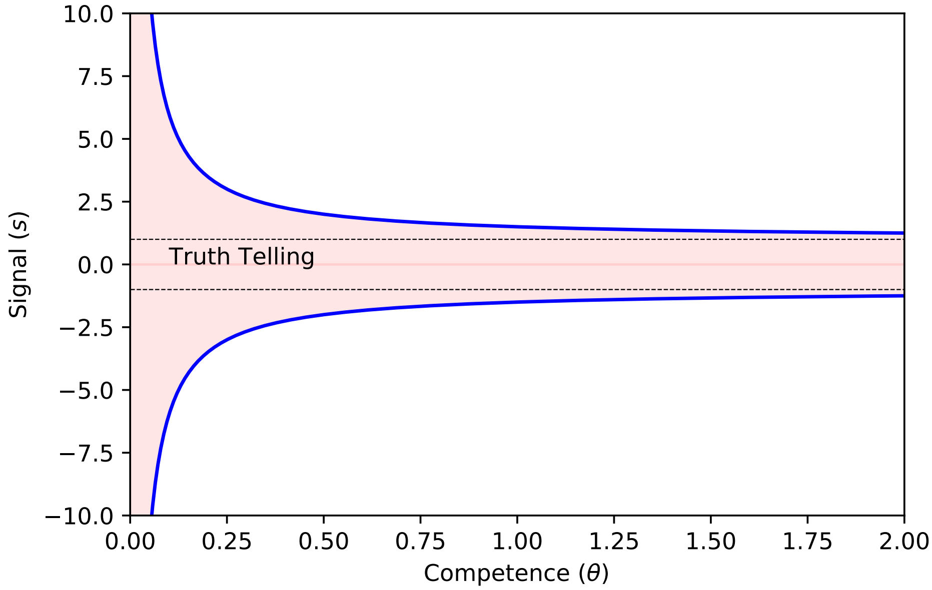


Figure 1: The solid lines show the signal thresholds $\pm\hat{s}(\theta)$ as a function of the Advisor's qualification θ. When the Advisor receives a signal $s \in [-\hat{s}(\theta), \hat{s}(\theta)]$, she reveals her signal to the Leader. Dashed lines are asymptotes of the thresholds $\pm\hat{s}(\theta)$ when $\Psi = 1$ and $q = 1/2$.

This specification of the actors' utilities allows us to give a precise description of the trade-off that the Leader faces between access to information and the quality of information. From Lemma 1, the probability that an Advisor of competence θ reveals her informative signal to the leader is $r(\theta) \equiv Pr[s \in \big(-\hat{s}(\theta), \hat{s}(\theta)\big)]$. The Leader's expected utility from hiring an Advisor of competence θ is

$$EU_L[\theta] = \rho \cdot \Big(r(\theta) \cdot \frac{-1}{q+\theta} + (1-r(\theta)) \cdot E[-w^2 | s \notin \big(-\hat{s}(\theta), \hat{s}(\theta)\big)]\Big) + (1-\rho) \cdot \frac{-1}{q}. \quad (10)$$

It is important to note that, conditional on not observing an informative message from the Advisor, the Leader infers that the signal the Advisor observed is not in $\big(-\hat{s}(\theta), \hat{s}(\theta)\big)$. Therefore, the Leader's expected utility differs depending on the cause of the absence of an informative message. For the closed form of the Leader's expected utility see Appendix A.

The following proposition shows that a key property of Leader's induced preferences over agent types in the quadratic utilities model.

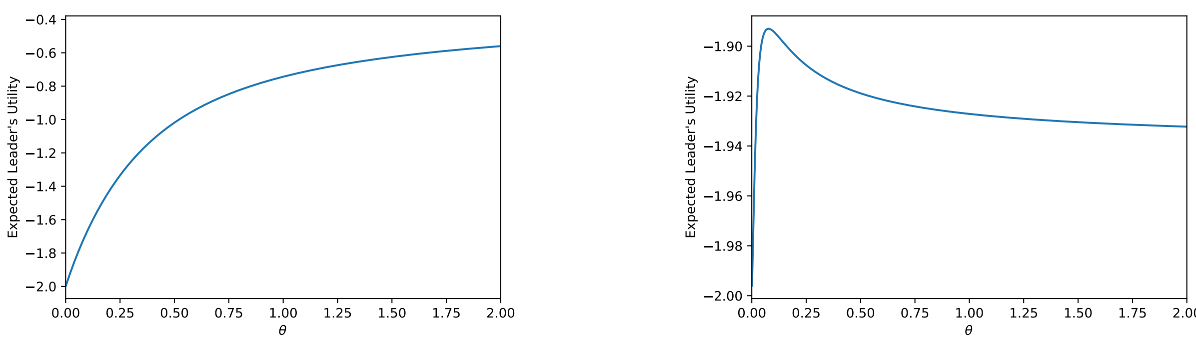
Proposition 3. *There exists a unique threshold $\Psi^*(q)$ such that the Leader prefers an Advisor of some finite competence for all $\Psi < \Psi^*(q)$ and prefers an Advisor of infinite competence otherwise.*

Proof. For proof see Appendix B. □

Proposition 3 shows that when the Advisors do not value office enough, the Leader's optimal advisor is one of finite competence. This result may seem counterintuitive, as it predicts that the Leader might be better off with an advisor with erroneous knowledge than with one whose expertise is flawless. However, it is important to note that advisors with high-quality information do not always deliver high-quality advice. Instead, as we show in Proposition 1, they are the most tempted to conceal their knowledge to avoid significant policy changes. The more highly the Advisor values the position, the less likely she is to conceal information. Therefore, when Ψ is sufficiently low, the Leader gets the best advice from a finitely competent advisor.

Figure 2 shows the Leader's expected utility as a function of competence (θ) for different Ψ. When the advisors value office highly (panel (a)), the Leader's expected utility increases in the Advisor's competence. However, as the office's valuation decreases, the advisors of high competence begin to conceal more information from the Leader. Panel (b) illustrates the case in which the value of the position is low, and thus the Leader gets more useful advice (and higher expected utility) from a relatively low competence Advisor.

Figure 2: Expected Leader's utility as a function of the Advisor's competence for different Ψ; $\rho = 1$, $q = 1$



(a) $\Psi = 10$ (b) $\Psi = 0.5$

Comparative Statics

We can interpret Ψ as effectively measuring the Advisor's opportunity cost of maintaining her position as the Advisor to the current Leader. Lowering Ψ means decreasing that opportunity cost – i.e., making the outside options more attractive and the value of continuing as the Leader's Advisor less attractive. We consider next how Ψ affects the Advisor's optimal competence that maximizes the Leader's utility, as well as, holding the Advisor's competence constant, the Leader's utility.

We can state the following result:

Proposition 4.

1. *The optimal (interior) competence of the Advisor increases in how much the Advisor values office,* Ψ*;*

2. *The Leader's utility increases in how much the Advisor values office,* Ψ*.*

Proof. See Appendix B for proof. □

We can interpret Ψ from an institutional perspective in a way that allows us to use our model to shed light on some of the under-appreciated effects of political polarization. Polarization decreases the correlation between preferences of political opponents and makes governance less common-value. It is reasonable to expect, thus, that higher polarization means that an Advisor who has been dismissed by a given Leader for what is, in effect, opposition to her policy agenda is more likely to find favor, at least in the short run, with the Leader's political opponents. In effect, then, polarization decreases the value to the Advisor of keeping the current Leader satisfied, i.e., it lowers Ψ. With this interpretation in mind, Proposition 4, thus, suggests an underappreciated effect of polarization: with higher polarization, and so, lower Ψ, Leaders are induced to choose lower-competence advisors. It also suggests, as a consequence, they are less likely to choose policies that are radical departures from the status quo, since they are likely to remain relatively less informed.

Biased Leaders

In this section, we allow the Leader's preference to be biased, asymmetrically affecting policies he implements. In particular, assume that the Leader's utility is now given by

$$U_L(a,b) = -(w-a)^2 + b \cdot a$$

where parameter b ($b \in \mathbf{R}$) measures the Leader's bias. When $b = 0$, the utility is identical to the utility for the case of the unbiased Leader. However, when b exceeds 0, it suggests that the Leader has an *rightward bias*, expressing aversion to a policy changes to the left of the status quo. When b is below 0, the Leader has a *leftward bias*, getting additional utility from implementing left-leaning policies.

Conditional on observing the informative message ($m \neq \varnothing$) from the Advisor, the Leader implements policy $a^*(m) = \frac{m \cdot \theta}{q+\theta} + \frac{b}{2}$. Given the Advisor's revelation strategy, the Leader implements a sequentially optimal default policy $d(b,\cdot)$ after message $m = \emptyset$. Given the Leader's policy choice as a function of m, the Advisor who observes a signal s reveals her signal when

$$-\sqrt{\Psi + \underbrace{d(b,\cdot)^2}_{\substack{Indirect\ Effect\\ of\ the\ Bias}}}\cdot(1+\frac{q}{\theta})-\underbrace{\frac{b}{2}\cdot(1+\frac{q}{\theta})}_{\substack{Direct\ Effect\\ of\ the\ Bias}} < s < \sqrt{\Psi + \underbrace{d(b,\cdot)^2}_{\substack{Indirect\ Effect\\ of\ the\ Bias}}}\cdot(1+\frac{q}{\theta})-\underbrace{\frac{b}{2}\cdot(1+\frac{q}{\theta})}_{\substack{Direct\ Effect\\ of\ the\ Bias}}. \quad (11)$$

As a comparison of inequalities (9) and (11) demonstrates, the Advisor adjusts her strategy in response to the Leader's bias. The Leader's bias exerts two effects on the Advisor's revelation strategy. The direct effect, deriving from the Leader's policy response to informative messages, can be isolated by setting $d(b,\cdot) = 0$ in (11), yielding

$$\begin{aligned} \underline{\hat{s}} &= -\sqrt{\Psi}\cdot(1+\frac{q}{\theta}) - \frac{b}{2}\cdot(1+\frac{q}{\theta}) = -\hat{s}(\theta,\cdot) - \frac{b}{2}\cdot(1+\frac{q}{\theta}), \\ \hat{\bar{s}} &= \sqrt{\Psi}\cdot(1+\frac{q}{\theta}) - \frac{b}{2}\cdot(1+\frac{q}{\theta}) = \hat{s}(\theta,\cdot) - \frac{b}{2}\cdot(1+\frac{q}{\theta}), \end{aligned} \quad (12)$$

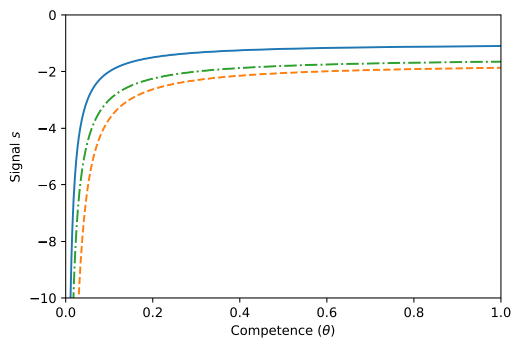
where $\hat{s}(\theta,\cdot)$ is the threshold the Advisor chooses when the Leader is unbiased (see equation 9). For example, suppose the Leader has a rightward bias ($b > 0$). Such a Leader implements policies with a rightward shift from those an unbiased Leader would choose. This encourages the Advisor, who wishes the legislation to match the status-quo, to reveal more left-leaning signals than right-leaning signals, altering the revelation bounds. This effect is described precisely by (12).

The second, indirect, effect of the Leader's bias on the Advisor's strategy occurs via the Leader's policy choice when he does not receive an informative message. A Leader with a rightward bias should infer from an uninformative message that the Advisor is more likely to be concealing a signal to the right of the status quo than to the left. Thus, it will be sequentially rational for the Leader to choose a default policy to the right of the status quo. Because the Leader's policy choice in the absence of an informative signal is drifting to the right, the (marginal) disutility to the Advisor from revealing any signal is smaller. This, in turn, encourages the Advisor to conceal less information from the Leader both on the left and on the right compared to the thresholds described by inequality 12, in which the default policy was held fixed at 0.

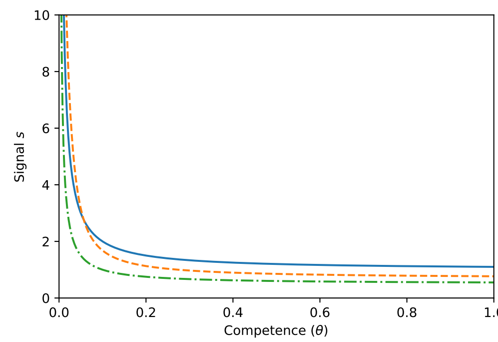
Note that, when compared against a baseline model (with neutral Leader) the direct and indirect effects of the Leader's bias on the revelation thresholds are mutually reinforcing when it comes to the threshold opposite the bias (e.g., the impact of the rightward bias on the left-leaning signals) but are in tension for the threshold on the same side as the bias. If we return back to the example of a Leader with a rightward bias ($b > 0$), when it comes to the left-leaning signal, the direct effect of the bias encourages the Advisor to reveal information to the left of the threshold, and the indirect effect further widens the area of revelation. However, when it comes to the right-leaning signals, the direct effect shifts the right threshold to the left, while the indirect effect expands it to the right.

Figure 3 shows the decomposition of the effects of the Leader's rightward bias on the Advisor's revelation strategy, while figure 4 exhibits the case of the Leader's leftward bias. The solid blue curves represent the baseline revelation thresholds. The dashed orange curves depict the thresholds that the Advisor adopts as a consequence of the Leader's bias. The dashed-dotted curve shows what we referred to as a direct effect of the bias, treating the default policy as if it were fixed. Note that a rightward bias decreases the lower bound on revelation but may increase or decrease the upper bound depending on the Advisor's competence.

Figure 3: Impact of the Leader's rightward bias ($b > 0$) on the Advisor's revelation strategy.



(a) The threshold above which the Advisor reveals signals to the left of the status quo. The solid curve represents the baseline model threshold. The dashed-dotted (green) curve shows the threshold with the direct effect of the Leader's bias. The dashed (orange) curve shows the threshold with the direct and indirect effect of the Leader's bias.



(b) The threshold below which the Advisor reveals signals to the right of the status quo. The solid curve represents the baseline model threshold. The dashed-dotted (green) curve shows the threshold with the direct effect of the Leader's bias. The dashed (orange) curve shows the threshold with the direct and indirect effect of the Leader's bias.

We have the following result:

Proposition 5. *When the Leader is biased,*

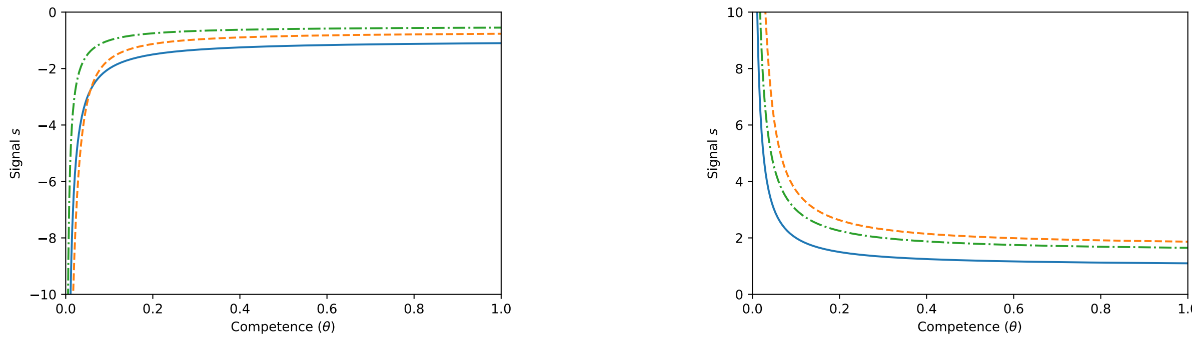
1. *the Advisor's revelation strategy is more informative on the side opposite the Leader's policy bias;*

2. *the Leader's policy choice conditional on observing no informative message drifts away from the status quo in the direction of the Leader's policy bias.*

3. *the Advisor reveals a larger range of messages* $(\hat{\bar{s}} - \hat{\underline{s}})$ *than when the Leader is unbiased.*

Proof. See Appendix D. □

Figure 4: Impact of the Leader's leftward bias on the Advisor's revelation strategy.



(a) The threshold above which the Advisor reveals signals to the left of the status quo. The solid curve represents the baseline model threshold. The dashed-dotted (green) curve shows the threshold with the direct effect of the Leader's bias. The dashed (orange) curve shows the threshold with the direct and indirect effect of the Leader's bias.

(b) The threshold below which the Advisor reveals signals to the right of the status quo. The solid curve represents the baseline model threshold. The dashed-dotted (green) curve shows the threshold with the direct effect of the Leader's bias. The dashed (orange) curve shows the threshold with the direct and indirect effect of the Leader's bias.

Because the Advisor's strategy always counteracts the biased Leader's preference, the biased Leader gets relatively little advice urging policy consistent with his bias and relatively more advice urging policy moves contrary to his bias. While it might appear that advisors systematically seek to thwart the Leader's agenda or have preferences diametrically opposed to his (cue the former President's complaints about the "deep state"), in fact, it is the the Leader's own bias that impedes his ability to get more even-handed information. Interestingly, note that the policy that the Leader chooses in the absence of an informative recommendation (message) from the Advisor is more extreme than it would be if the Leader had no advisor, and were simply choosing a policy based on his prior.

As Proposition 5 highlights, the revelation intervals are always wider when the Leader is biased than when he is not: the direct impact of the bias shifts the revelation interval in the direction opposite of the bias, while indirect impact expands the interval. However, it does not imply that the biased Leader is better informed than unbiased one: the Leader's bias always shifts the Advisor's revelation interval away from the most likely realization of the signal. Therefore, even though the Advisor might reveal higher variety of advice as the Leader's bias increases, it might also be less likely to reveal such signals. The following proposition characterizes condition under which the Advisor's revelation intervals with the biased Leader are wider than with the unbiased Leader.

Proposition 6. *The Advisor reveals strictly more information ($\hat{\bar{s}} > \hat{s}$ and $\underline{\hat{s}} < -\hat{s}$) when the Leader is biased than when the Leader is unbiased if and only if*

$$|b| < 2 \cdot \big(\sqrt{\Psi + (d^*)^2} - \sqrt{\Psi}\big), \tag{13}$$

where d^* solves

$$d - \Big(b/2 + \sqrt{\frac{1/q + 1/\theta}{2\pi}} \cdot (e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot\theta}} - e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot b\cdot\theta}})\Big) = 0.$$

Proposition 6 shows that when the indirect effect of the Leader's bias dominates direct effect of the Leader's bias, the Advisor reveals more information to the biased Leader than she would to the unbiased one. One important implication of the wider revelation interval is its impact on the Leader's preference vis-à-vis the Advisor's competence. Given that the revelation with the biased Leader is wider when inequality (13) is satisfied, the biased Leader's utility will strictly increase in the Advisor's competence: because revelation intervals are wider when the Leader is biased, the Leader can 'sacrifice' having advice for the quality of advice, when compared against unbiased Leader. Add discussion

Consider next how the default policy changes with the Advisor's competence. When the Advisor's competence approaches 0, the Advisor reveals all signals she observes, and it is sequentially rational for the Leader to implement default policy $d^* = 0$ when he observes no informative signal from the Advisor. As the Advisor's competence begins to grow, her incentives to reveal (asymmetrically) weaken, and the default policy responds by drifting toward the Leader's extreme bias (in accordance with the argument above). When an Advisor of relatively low θ is not revealing, the signal the Advisor observed is likely very high, and the Leader updates accordingly and chooses a relatively extreme policy. However, as the Advisor's competence level continues to increase, revealing even more moderate signals becomes more costly to the Advisor, and so the Leader's default policy assigns more weight to relatively moderate values of the state and, accordingly, default policy drops. As the Advisor's competence approaches infinity, the default policy converges to a positive value that is a function of the Leader's bias (b), informativeness of the prior (q), and the Advisor's valuation of office (Ψ).

Proposition 7. *When the Leader is biased, the default policy is non-monotonic in the Advisor's competence.*

Proof. See Appendix E. □

Discussion

TO BE ADDED

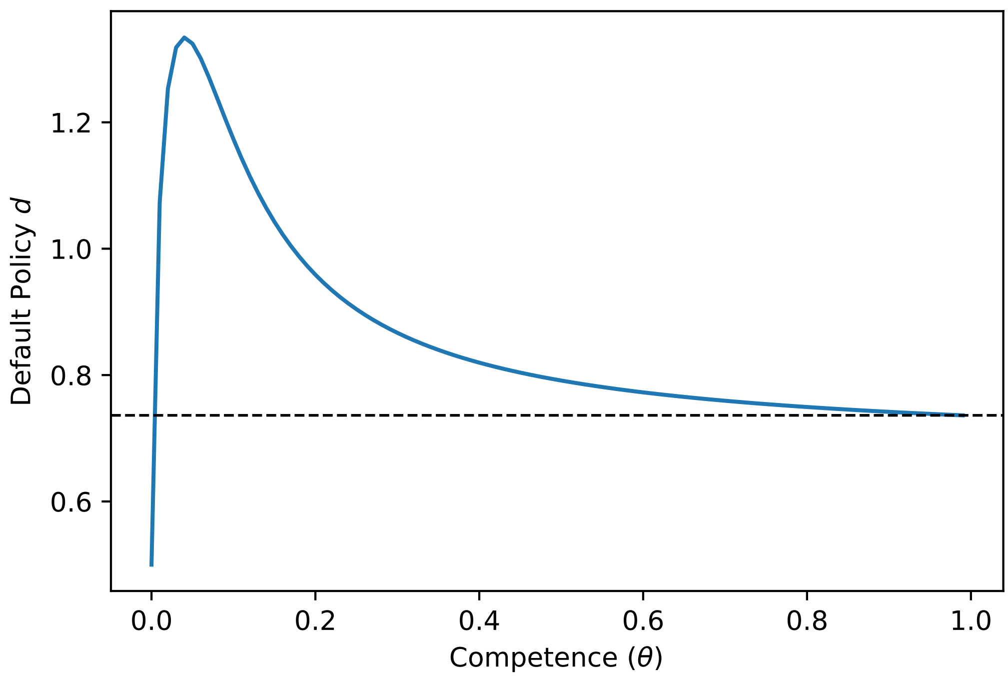


Figure 5: Default policy as a function of competence for $b = 1$.

Robustness: Advisors with State-Dependent Preference

In this section, we relax the assumption of the state-independence of the Advisor's preference and show that the basic incentives that drive the analysis above remain intact.

Let us assume that both the Advisor and the Leader wish to match the state of the world, but the Advisor is more conservative than the Leader. The Leader's bliss point is at w while the Advisor's bliss point is at $c \cdot w$, where $c \in [0, 1]$ measures the Advisor's conservatism, lower c corresponding to greater conservatism of the Advisor. When the Leader observes the signal, he sets policy to match the mean of posterior distribution:

$$a = \frac{s \cdot \theta}{\theta + q}. \tag{14}$$

There exists an equilibrium, where the Advisor reveals her information if and only if

$$-(\frac{s \cdot \theta}{\theta + q} - c \cdot \frac{s \cdot \theta}{\theta + q})^2 + \Psi > -(c \cdot \frac{s \cdot \theta}{\theta + q})^2. \tag{15}$$

When the Advisor is not very conservative and shares the Leader's preference ($c > 1/2$), she reveals every signal she observes. When the Advisor is sufficiently conservative, she reveals the signal (s) she observes when it falls within $[-\sqrt{\Phi} \cdot (1 + q/\theta) \cdot \frac{1}{\sqrt{1-2c}}, \sqrt{\Phi} \cdot (1 + q/\theta) \cdot \frac{1}{\sqrt{1-2c}}]$, and conceals all signals outside this interval.

Proposition 8.

1. *The optimal interior competence of the Advisor decreases in the Advisor's conservatism (i.e., increases in c);*

2. *The Leader's utility decreases in the Advisor's conservatism (i.e., increases in c).*

Proof. See Appendix E for the proof. □

Appendices

Appendix A: Non-monotonicity of the Leader's Preference

The Leader's expected utility:

$$E[U_L(\theta)] = \overbrace{\rho}^{\substack{\text{Advisor observes} \\ \text{signal } s}} \times \Big(\underbrace{Pr[s \in (-\hat{s}, \hat{s})]}_{\substack{\text{Advisor sends} \\ \text{informative message}}} \times \underbrace{\frac{-1}{q+\theta}}_{\substack{\text{Leader's expected utility} \\ \text{after informative signal}}} + \underbrace{Pr[s \notin (-\hat{s}, \hat{s})]}_{\substack{\text{Advisor does not} \\ \text{send informative message}}} \times E[-w^2 | s \notin (-\hat{s}, \hat{s})] \Big) + \underbrace{(1-\rho)}_{\substack{\text{Advisor does not see} \\ \text{informative signal}}} \times \frac{-1}{q}, \tag{16}$$

where:

$$\begin{aligned} A \equiv Pr[s \in [-\hat{s}, \hat{s}]] \times \frac{-1}{q+\theta} \\ = \left(\Phi(\hat{s}/\sqrt{1/q + 1/\theta}) - \Phi(-\hat{s}/\sqrt{1/q + 1/\theta})\right) \times \frac{-1}{q+\theta}. \end{aligned} \tag{17}$$

and

$$
\begin{aligned}
B &\equiv Pr[s \notin (-\hat{s}, \hat{s})] \times E[-w^2 | s \notin [-\hat{s}, \hat{s}]] \\
&= Pr[s < -\hat{s}] \times E[-w^2 | s < -\hat{s}] + Pr[s > \hat{s}] \times E[-w^2 | s > \hat{s}] \\
&= Pr[s < -\hat{s}] \times (\int_{-\infty}^{\infty} \int_{-\infty}^{-\hat{s}-y} -x^2 \frac{f_{w,\varepsilon}(x,y)}{Pr[s < -\hat{s}]} dxdy) \\
&\quad + Pr[s > \hat{s}] \times (\int_{-\infty}^{\infty} \int_{\hat{s}-y}^{\infty} -x^2 \frac{f_{w,\varepsilon}(x,y)}{Pr[s > \hat{s}]}) dxdy) \\
&= (\int_{-\infty}^{\infty} \int_{-\infty}^{-\hat{s}-y} -x^2 \frac{1}{2\pi} \frac{1}{\sqrt{1/q}} \frac{1}{\sqrt{1/\theta}} e^{-\frac{1}{2}(\frac{x^2}{1/q} + \frac{y^2}{1/\theta})} dxdy \\
&\quad + \int_{-\infty}^{\infty} \int_{\hat{s}-y}^{\infty} -x^2 \frac{1}{2\pi} \frac{1}{\sqrt{1/q}} \frac{1}{\sqrt{1/\theta}} e^{-\frac{1}{2}(\frac{x^2}{1/q} + \frac{y^2}{1/\theta})} dxdy) \qquad (18) \\
&= \frac{1}{2\pi} \frac{1}{\sqrt{1/q}} \frac{1}{\sqrt{1/\theta}} \int_{-\infty}^{\infty} -\frac{1}{q} \times \sqrt{2\pi} \times e^{\frac{\theta y^2}{2}} \Big((\hat{s} - y)\phi\big(\sqrt{q}(\hat{s} - y)\big) \\
&\quad + (\hat{s} + y)\phi\big(\sqrt{q}(\hat{s} + y)\big) + \frac{2 - \Phi(\sqrt{q}(\hat{s} - y)) - \Phi(\sqrt{q}(\hat{s} + y))}{\sqrt{q}} \Big) dy \\
&= \int_{-\infty}^{\infty} -\frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{q/\theta}} \times e^{-\theta y^2/2} \Big((\hat{s} - y)\phi\big(\sqrt{q}(\hat{s} - y)\big) \\
&\quad + (\hat{s} + y)\phi\big(\sqrt{q}(\hat{s} + y)\big) + \frac{2 - \Phi(\sqrt{q}(\hat{s} - y)) - \Phi(\sqrt{q}(\hat{s} + y))}{\sqrt{q}} \Big) dy.
\end{aligned}
$$

Let us denote

$$
\begin{aligned}
g(a) \equiv \int_{-\infty}^{\infty} -\frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{q/\theta}} \times e^{-\theta y^2/2} \Big(&(\hat{s} - y)\phi\big(\sqrt{q}(\hat{s} - y)\big) + (\hat{s} + y)\phi\big(\sqrt{q}(\hat{s} + y)\big) \\
&+ \frac{2 - \Phi(\sqrt{aq}(\hat{s} - y)) - \Phi(\sqrt{aq}(\hat{s} + y))}{\sqrt{q}} \Big) dy. \qquad (19)
\end{aligned}
$$

Note that $g(1) = B$ and our objective is to compute $g(1)$. Let us start by computing $g(0)$

$$
\begin{aligned}
g(0) &= \int_{-\infty}^{\infty} -\frac{1}{\sqrt{2\pi}} \frac{1}{\sqrt{q/\theta}} e^{-\theta y^2/2} \Big((\hat{s} - y)\phi\big(\sqrt{q}(\hat{s} - y)\big) + (\hat{s} + y)\phi\big(\sqrt{q}(\hat{s} + y)\big) + \frac{1}{\sqrt{q}} \Big) dy \\
&= -\frac{1}{q} - \frac{e^{\frac{-\hat{s}^2}{2(1/q + 1/\theta)}} \sqrt{2/\pi}\, \hat{s}}{\sqrt{q(1 + q/\theta)^3}}. \qquad (20)
\end{aligned}
$$

Now we compute derivative of $g(a)$ with respect to a. By Leibniz integral rule[2]

$$
\begin{aligned}
\frac{\partial g(a)}{\partial a} = \frac{\partial}{\partial a}\int_{-\infty}^{\infty} -\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{q/\theta}} \times e^{-\theta y^2/2}\big((\hat{s}-y)\phi(-\sqrt{q}(\hat{s}-y)) + (\hat{s}+y)\phi(-\sqrt{q}(\hat{s}+y)) \\
+\frac{2-\Phi(\sqrt{aq}(\hat{s}-y)) - \Phi(\sqrt{aq}(\hat{s}+y))}{\sqrt{q}}\big)dy \\
= \int_{-\infty}^{\infty}\frac{\partial}{\partial a}\Big(-\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{q/\theta}} \times e^{-\theta y^2/2}\big((\hat{s}-y)\phi(-\sqrt{q}(\hat{s}-y)) + (\hat{s}+y)\phi(-\sqrt{q}(\hat{s}+y)) \\
+\frac{2}{\sqrt{q}} - \frac{\Phi(\sqrt{aq}(\hat{s}-y)) + \Phi(\sqrt{aq}(\hat{s}+y))}{\sqrt{q}}\big)\Big)dy \\
= \int_{-\infty}^{\infty} -\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{q/\theta}}e^{-\frac{\theta y^2}{2}}\Big(-\phi(\sqrt{aq}(\hat{s}-y))\frac{1}{2\sqrt{a}}\sqrt{q}(\hat{s}-y) - \phi(\sqrt{aq}(\hat{s}+y))\frac{1}{2\sqrt{a}}\sqrt{q}(\hat{s}+y)\Big)dy \\
= \int_{-\infty}^{\infty}\frac{1}{\sqrt{2\pi}}\frac{1}{\sqrt{q/\theta}}e^{-\frac{\theta y^2}{2}}\frac{1}{2\sqrt{a}}\sqrt{q}\Big(\frac{e^{-\frac{aq(\hat{s}-y)^2}{2}}}{\sqrt{2\pi}}(\hat{s}-y) + \frac{e^{-\frac{aq(\hat{s}+y)^2}{2}}}{\sqrt{2\pi}}(\hat{s}+y)\Big)dy \\
= \int_{-\infty}^{\infty} e^{-\frac{\theta y^2}{2}}\sqrt{\theta} \times \frac{e^{-\frac{aq(\hat{s}-y)^2}{2}}(\hat{s}-y) + e^{-\frac{aq(\hat{s}+y)^2}{2}}(\hat{s}+y)}{4\pi\sqrt{aq}}dy \\
= \hat{s} \times \frac{e^{-\frac{aq\hat{s}^2\theta}{2(1+\frac{aq}{\theta})}}}{\sqrt{2\pi}\sqrt{aq}(1+\frac{aq}{\theta})^{3/2}}.
\end{aligned}
\tag{21}
$$

We now take an integral wrt a of $\frac{dg(a)}{da}$:

$$
\begin{aligned}
g(a) = \int \hat{s} \times \frac{e^{-\frac{aq\hat{s}^2\theta}{2(aq+\theta)}}}{\sqrt{2\pi}\sqrt{a\cdot q}(1+\frac{a\cdot q}{\theta})^{3/2}}da \\
= \frac{2\Phi(\frac{\hat{s}}{\sqrt{\frac{1}{a\cdot q}+\frac{1}{\theta}}}) - 1}{q} + C,
\end{aligned}
\tag{22}
$$

where C is unknown constant. Finally, let us note that

$$
g(a=0) = -\frac{1}{q} - \frac{e^{\frac{-q\hat{s}^2\theta}{2(q+\theta)}}\sqrt{2/\pi}\hat{s}}{\sqrt{q}(1+q/\theta)^{3/2}} \tag{23}
$$

and

$$
g(a=0) = \lim_{a\to 0}\frac{2\Phi(\frac{\hat{s}}{\sqrt{\frac{1}{aq}+\frac{1}{\theta}}}) - 1}{q} + C = C, \tag{24}
$$

where equation 23 is corollary of equation 20 and equation 24 is corollary of equation 22.

[2] Leibniz integral rule applies because the integral of partial derivative converges link

Therefore

$$C = -\frac{1}{q} - \frac{e^{\frac{-q\hat{s}^2\theta}{2(q+\theta)}}\sqrt{2/\pi}\hat{s}}{\sqrt{q}(1+q/\theta)^{3/2}}. \tag{25}$$

Finally,

$$\begin{aligned} B &= \frac{Pr[s \notin [-\hat{s},\hat{s}]]}{Pr[s < -\hat{s}]} \times g(a=1) \\ &= \lim_{a\to 1} \frac{2\Phi(\frac{\hat{s}}{\sqrt{\frac{1}{aq}+\frac{1}{\theta}}})-1}{q} - \frac{1}{q} - \frac{e^{\frac{-q\hat{s}^2\theta}{2(q+\theta)}}\sqrt{2/\pi}\hat{s}}{\sqrt{q}(1+q/\theta)^{3/2}} \\ &= (\frac{2\Phi(\frac{\hat{s}}{\sqrt{\frac{1}{q}+\frac{1}{\theta}}})-1}{q} - \frac{1}{q} - \frac{e^{\frac{-q\hat{s}^2\theta}{2(q+\theta)}}\sqrt{2/\pi}\hat{s}}{\sqrt{q}(1+q/\theta)^{3/2}}) \end{aligned} \tag{26}$$

Therefore, the expected Leader's utility is

$$\begin{aligned} E[U_L(\theta)] = \rho \times \Big(\big((2\Phi(\frac{\hat{s}}{\sqrt{1/q+1/\theta}}) - 1) \big) \times \frac{-1}{q+\theta} \\ +(\frac{2\Phi(\frac{\hat{s}}{\sqrt{\frac{1}{q}+\frac{1}{\theta}}})-1}{q} - \frac{1}{q} - \frac{e^{\frac{-q\hat{s}^2\theta}{2(q+\theta)}}\sqrt{2/\pi}\hat{s}}{\sqrt{q}(1+q/\theta)^{3/2}})\Big) + (1-\rho) \times \frac{-1}{q}. \end{aligned} \tag{27}$$

Appendix B: Existence of the finite optimum

The Leader's utility derivative wrt θ is:

$$\begin{aligned} \frac{\partial E[U_L(\theta)]}{\partial\theta} = \frac{\rho}{2(q+\theta)^2}\Big(- \frac{\sqrt{2}e^{-\frac{\Psi q(1+q/\theta)}{2}}\sqrt{\frac{\Psi q\theta(q+\theta)}{\pi}}(2\theta + \Psi q(q+\theta))}{\theta^2} \\ + \underbrace{2(2\Phi(\frac{\hat{s}}{\sqrt{1/q+1/\theta}}) - 1)}_{>0}\Big). \end{aligned} \tag{28}$$

Note that $\frac{\partial E[U_L(\theta)]}{\partial\theta}$ converges to $\frac{\rho}{q^2}$ as θ approaches 0 and converges to ± 0 as θ approaches infinity, where the sign depends on whether

$$F(\Psi, q) \equiv 4 - e^{-\frac{\Psi q}{2}}\sqrt{\frac{2}{\pi}}\sqrt{\Psi q}(2+\Psi q) - 4\Phi(\sqrt{\Psi q}))$$

is positive or negative. $F(\Psi = 0, q) = 0$ and it decreases in Ψ for $\Psi < 1/q$ and increases in Ψ when $\Psi > 1/q$. Therefore, for $\Psi \in (0, 1/q)$, $\frac{\partial E[U_L(\theta)]}{\partial\theta}$ is negative at $\theta = \infty$ and, because $E[U_L(\theta)]$ is continuous and differentiable, the interior optimum will exist (note that $\Psi < 1/q$ is sufficient but not necessary condition for the existence of the interior optimum).

Let us denote the derivative of the Leader's utility with respect to the Advisor's qualification θ as $D(\theta,\Psi)\equiv\frac{\partial E[U_L|\theta]}{\partial\theta}$. Note that the Leader's utility reaches local maximum at $\hat{\theta}$ s.t. $D(\theta,\Psi)=0$. By the implicit function theorem, in order to seek how Ψ affects the Leader's choice of interior optimal Advisor's qualification, one needs to compute

$$\frac{d\hat{\theta}(\Psi)}{d\Psi}=-\frac{\partial_\Psi D(\theta,\Psi)}{\partial_\theta D(\theta,\Psi)}. \tag{29}$$

Because we are looking for θ that maximizes the Leader's utility, $\partial_\theta D(\theta,\Psi)$ should not exceed zero. Therefore, sign of equation 29 mirrors sign of $\partial_\Psi D(\theta,\Psi)$. Because

$$\partial_\Psi D(\theta,\Psi)=\underbrace{\frac{\rho\times e^{-\frac{\Psi q\theta(q+\theta)}{2\theta}}\times\Psi\times q^2}{2\times\theta^2\times\sqrt{2\pi}\times\sqrt{\Psi q\theta(q+\theta)}}}_{>0}\times(\Psi q(q+\theta)-\theta), \tag{30}$$

sign of $(\Psi q(q+\theta)-\theta)$ determines whether $\hat{\theta}$ increases or decreases in Ψ. When $(\Psi q(q+\theta)-\theta)$ is positive, optimal interior competence increases in Ψ, and it decreases in Ψ when $(\Psi q(q+\theta)-\theta)$ is negative.

Note that $D(\theta,\Psi)$ reaches minimum at $\Psi=\frac{\theta}{q(q+\theta)}$. Next, because $D(\theta=0,\Psi)=\frac{\rho}{2q^2}$ is positive while $D(\theta=\frac{\Psi q^2}{1-\Psi q},\Psi)=-\frac{(1-\Psi q)^2\rho(3\sqrt{2}+\sqrt{e\pi}2(1-2\Phi(1))}{2\sqrt{e\pi}q^2}$ is negative, when $\Psi>\frac{\theta}{q(q+\theta)}$, there will be interior maximum of the Leader's utility $\hat{\theta}$ s.t. $\hat{\theta}<\frac{\Psi q^2}{1-\Psi q}$. Because $\Psi>\frac{\theta}{q(q+\theta)}$, this interior maximum () increases in Ψ.

Finally, let us prove that if the expected Leader's utility has a local maximum, this local maximum is unique. Once we prove this statement, we prove that **any** interior maximum increases in Ψ. First, note that derivative of the Leader's utility wrt θ is:

$$\frac{\partial E[U_L(\theta)]}{\partial\theta}=\underbrace{\frac{\rho}{2(q+\theta)^2}}_{>0}\Big(-\frac{\sqrt{2}e^{-\frac{\Psi q(1+q/\theta)}{2}}\sqrt{\frac{\Psi q\theta(q+\theta)}{\pi}}(2\theta+\Psi q(q+\theta))}{\theta^2} \\ +2(2\Phi(\frac{\hat{s}}{\sqrt{1/q+1/\theta}})-1)\Big). \tag{31}$$

Because $\rho>0$, sign of $\frac{\partial E[U_L(\theta)]}{\partial\theta}$ mirrors the sign of

$$Interior(\theta)\equiv-\frac{\sqrt{2}e^{-\frac{\Psi q(1+q/\theta)}{2}}\sqrt{\frac{\Psi q\theta(q+\theta)}{\pi}}(2\theta+\Psi q(q+\theta))}{\theta^2}+2(2\Phi(\frac{\hat{s}}{\sqrt{1/q+1/\theta}})-1).$$

Now note that

$$\frac{\partial Interior(\theta)}{\partial\theta} = \frac{e^{-\frac{\Psi q(1+q/\theta)}{2}} q\sqrt{\frac{\Psi q\theta(q+\theta)}{2\pi}}\Psi(q\theta - \Psi q^2(q+\theta)}{\theta^4}. \quad (32)$$

Therefore, $Interior(\theta)$ decreases in θ for $\theta < \frac{\Psi q^2}{1-\Psi q}$ and increases in θ for $\theta > \frac{\Psi q^2}{1-\Psi q}$. It implies that the expected Leader's utility can have no more than one local maximum.

As we just proved, the interior maximum of the Leader's utility exists if and only if $\Psi > \frac{\theta}{q(q+\theta)}$. Therefore, when the interior maximum exists,

$$\partial_\Psi D(\theta, \Psi) = \frac{\rho \times e^{-\frac{\Psi q\theta(q+\theta)}{2\theta}} \times \Psi \times q^2}{2 \times \theta^2 \times \sqrt{2\pi} \times \sqrt{\Psi \cdot q \cdot \theta \cdot (q+\theta)}} \times (\Psi q(q+\theta) - \theta) > 0.$$

Therefore, for any q there exists a unique threshold $\Psi^*(q)$ s.t. the Leader prefers interior competence over infinite competence for every $\Psi < \Psi^*(q)$.

Appendix D: Biased Leader

1. Note that the Leader's bias shifts the Advisors strategy in the direction opposite to the Leader's bias. As a result of that, the Leader always observes more messages that oppose his bias.

2. Given no informative message, the posterior that the Leader forms about the state of the world is

$$E[w|m = \varnothing] = \sqrt{\frac{1/q + 1/\theta}{2\pi \cdot q \cdot \theta}} \cdot (e^{-\frac{(b-2\sqrt{\Psi+d^2})^2 \cdot q \cdot (\theta+q)}{8\cdot\theta}} - e^{-\frac{(b+2\sqrt{\Psi+d^2})^2 \cdot q \cdot (\theta+q)}{8\cdot\theta}}).$$

When $b > 0$, $E[w|m = \varnothing]$ is positive. Thus it will be sequentially rational for the Leader to introduce policy to the right of the status quo. When b exceeds one, $E[w|m = \varnothing]$ is negative. Therefore, it is sequentially rational for the Leader to choose policy to the left of the status quo.

3. Note, that

$$(\hat{\bar{s}} - \hat{\underline{s}}) = 2 \cdot \sqrt{\Psi + d^2} > 2 \cdot \hat{s} = 2 \cdot \sqrt{\Psi}.$$

Appendix E: Biased Leader

Let us denote the following function as F for $b < 1$:

$$F = d - b/2 - \sqrt{\frac{1/q + 1/\theta}{2\pi}} \cdot (e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot\theta}} - e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot b\cdot\theta}}). \quad (33)$$

Then:

$$\partial_\theta d(\theta) = -\frac{\partial_\theta F}{\partial_d F} \tag{34}$$

Where:

$$\partial_\theta F = \frac{(\Psi + d^2) \cdot q \cdot (q+\theta) \cdot (e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot\theta}} - b \cdot e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot b\cdot\theta}}) + \theta \cdot b \cdot (e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot\theta}} - e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot b\cdot\theta}})}{2 \cdot b \cdot \sqrt{2\pi} \cdot \sqrt{1/q + 1/\theta} \cdot \theta^3 \cdot} \tag{35}$$

And:

$$\partial_d F = 1 - \frac{d \cdot (q+\theta)^2 \cdot (e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot\theta}} - b \cdot e^{-\frac{(\Psi+d^2)\cdot q\cdot(\theta+q)}{2\cdot b\cdot\theta}})}{b \cdot \sqrt{2\pi} \cdot \sqrt{1/q + 1/\theta} \cdot \theta^2} \tag{36}$$

First, note that the optimal default policy d^* converges to $b/2$ when θ converges to 0. At the same time, as θ converges to $+\infty$, F converges to:

$$F(\theta \to \infty) = d - b/2 - \sqrt{\frac{1/q}{2\pi}} \cdot (e^{-\frac{(d^2+\Psi)\cdot q}{2}} - e^{-\frac{(d^2+\Psi)\cdot q}{2\cdot b}}), \tag{37}$$

therefore, when b exceeds 0, the optimal default policy d^* converges to a constant above $b/2$ as θ approaches ∞, and, when b is below 0, the optimal default policy d^* converges to a constant below $b/2$.

Second, note that as θ approaches infinity, the derivative of d wrt θ approaches 0 from above for some parameter ranges (for instance when b=1 and $\Psi = 1$). Therefore, because the derivative is continuous for $\theta > 0$, it implies that the default policy d depends on θ non-monotonically.

Appendix E: Conservatism

This proposition is an immediate implication of a comparative statics analysis wrt Ψ. To see that, denote $\frac{\Psi}{1-2c}$ as new Ψ.

References

[1] Kenneth W Abbott et al. "Competence versus control: The governor's dilemma". In: *Regulation & Governance* 14.4 (2020), pp. 619–636.

[2] David Austen-Smith. "Information transmission in debate". In: *American Journal of political science* (1990), pp. 124–152.

[3] David Austen-Smith. "Interested experts and policy advice: Multiple referrals under open rule". In: *Games and Economic Behavior* 5.1 (1993), pp. 3–43.

[4] Ying Bai and Titi Zhou. ""Mao's last revolution": a dictator's loyalty–competence tradeoff". In: *Public Choice* 180.3 (2019), pp. 469–500.

[5] Marco Battaglini. "Multiple referrals and multidimensional cheap talk". In: *Econometrica* 70.4 (2002), pp. 1379–1401.

[6] Sourav Bhattacharya, Maria Goltsman, and Arijit Mukherjee. "On the optimality of diverse expert panels in persuasion games". In: *Games and Economic Behavior* 107 (2018), pp. 345–363.

[7] Sourav Bhattacharya and Arijit Mukherjee. "Strategic information revelation when experts compete to influence". In: *The RAND Journal of Economics* 44.3 (2013), pp. 522–544.

[8] Yeon-Koo Che and Navin Kartik. "Opinions as incentives". In: *Journal of Political Economy* 117.5 (2009), pp. 815–860.

[9] Wioletta Dziuda. "Strategic argumentation". In: *Journal of Economic Theory* 146.4 (2011), pp. 1362–1397.

[10] Georgy Egorov and Konstantin Sonin. "Dictators and their viziers: Endogenizing the loyalty–competence trade-off". In: *Journal of the European Economic Association* 9.5 (2011), pp. 903–930.

[11] Sean Gailmard and John W Patty. "Slackers and zealots: Civil service, policy discretion, and bureaucratic expertise". In: *American Journal of Political Science* 51.4 (2007), pp. 873–889.

[12] Thomas W Gilligan and Keith Krehbiel. "Asymmetric information and legislative rules with a heterogeneous committee". In: *American journal of political science* (1989), pp. 459–490.

[13] Aziz Huq and Tom Ginsburg. "How to lose a constitutional democracy". In: *UCLA L. Rev.* 65 (2018), p. 78.

[14] Ora John Reuter and Graeme B Robertson. "Subnational appointments in authoritarian regimes: Evidence from Russian gubernatorial appointments". In: *The Journal of politics* 74.4 (2012), pp. 1023–1037.

[15] Victor Shih, Christopher Adolph, and Mingxing Liu. "Getting ahead in the communist party: explaining the advancement of central committee members in China". In: *American political science review* 106.1 (2012), pp. 166–187.

[16] Hyun Song Shin. "The burden of proof in a game of persuasion". In: *Journal of Economic Theory* 64.1 (1994), pp. 253–264.

[17] Joel Sobel. "Giving and receiving advice". In: *Advances in economics and econometrics* 1 (2013), pp. 305–341.

[18] Joel Sobel. "Information control in the principal-agent problem". In: *International Economic Review* (1993), pp. 259–269.

[19] Kimiko Terai and Amihai Glazer. "Rivalry among agents seeking large budgets". In: *Journal of Theoretical Politics* 30.4 (2018), pp. 388–409.

[20] Asher Wolinsky. "Information transmission when the sender's preferences are uncertain". In: *Games and Economic Behavior* 42.2 (2003), pp. 319–326.

[21] Tianyang Xi. "All the emperor's men? Conflicts and power-sharing in imperial China". In: *Comparative Political Studies* 52.8 (2019), pp. 1099–1130.