Policy Vagueness and Reputational Concern

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Abstract

We present a game-theoretic model to analyze how a leader or manager's concern for reputation may influence the vagueness of their policy instructions to subordinates. The leader can be one of two types: congruent or non-congruent. A congruent leader's ideal policy aligns with that of the citizens, while a non-congruent leader benefits from implementing their own ideal policy. The leader is driven by two concerns: reputation and policy concerns. Both the leader and citizens are symmetrically uncertain about the leader's type, and there is also ex ante uncertainty regarding the leader's ideal policy. Vague instructions provide subordinates with greater discretion to pursue personal agendas, facilitating experimentation.

Our findings suggest that while both reputation and policy concerns individually favor a preference for vagueness, the trade-off between these concerns can create an incentive for clarity. In other words, policy vagueness varies non-monotonically with the level of reputational concern. We further explore the interaction between ex ante congruency and ex post flexibility, as well as how the leader's competence influences these dynamics and their welfare implications. Our analysis is applicable to various settings. For example, our theory predicts that a CEO or manager who is either early or late in their tenure (with either strong or weak concerns for reputation) tends to grant more discretion to subordinates compared to a manager in the middle of their career.

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Crossing the river by feeling for the stones.

– Xiaoping Deng

Brexit means Brexit.

– Theresa May

Will no one rid me of this meddlesome priest?

– Henry II

I'd like you to reflect a bit further on your proposal.

– a Japanese manager, from "Zen and the Art of Management" by Richard T. Pascale

1 Introduction

Policy vagueness is pervasive in political landscape. From ancient emperors to modern politicians, from autocracy to democracy, the political arena is replete with examples of policy ambiguity.[1] Outside of politics, vagueness is also prevalent in CEO speeches and even parent-child conversations.[2] When policies are vague, they offer flexibility for adaptation and adjustment to new information. However, this vagueness also provides politicians with a shield of plausible deniability, allowing them to evade accountability. While the former motive aligns with the interests of voters, the latter serves as a manipulative tool for politicians.

Despite these differing implications, either the adaptation concern or reputational concern tends to drive politicians toward vagueness rather than clarity. Both arguments, when considered individually, received some attention in the literature (see Kartik, Van Weelden and Wolton (2017) for the former, and Frenkel (2014) and Li (2010) for the latter). We introduce a model in which the leader faces a *tradeoff* between the adaptation concern and reputation concern. Most surprisingly, our analysis finds that while both concerns individually suggest a dominant preference for vagueness, an incentive for clarity can arise from the trade-off between the two. In other words, policy vagueness changes non-monotonically with reputational concern.

Model setup. More specifically, we consider a model in which a central leader sends policy guidance to local agents, which is where policy vagueness can occur. Local agents have their own preferences for policies and choose which policies to pilot. We call those who prefer the policy recommended by the central leader the consenting agents, and those who dislike the recommended policy the dissenting agents. Based

[1]For example, during 2020 presidential campaign, Joe Biden often deflected the question on court-packing and said that "You'll know my position on court packing when the election is over." (https://www.foxnews.com/opinion/biden-court-packing-democrats-socialists-mercedes-schlapp.) Donald Trump is also known for taking ambiguous positions on various issues, stating "I don't want to be in a position where I've said I would or I wouldn't. (https://time.com/4273054/donald-trump-specific-foreign-policy/) In directives issued from central to local authorities in China, there are also many grey directives that are ambiguous about what can or cannot be done (Ang (2024)).

[2]For instance, Facebook CEO Mark Zuckerberg often takes ambivalent positions on data privacy and security (https://www.cnbc.com/2018/03/21/facebook-ceo-mark-zuckerbergs-statements-on-privacy-2003-2018.html). More examples of strategic ambiguity in organizations can be found in Eisenberg (1984). Vague language is also abundant in daily conversations, as discussed by Camp (2018).

on the outcome of these pilots, the leader then chooses the final policy to implement. In other words, the leader can endorse or veto the pilot policies.

The leader can be of two types: congruent or non-congruent. A congruent leader's interests align with those of the representative voter, whereas a non-congruent leader has their own policy preferences that differ from the voters. There is ex ante symmetric uncertainty regarding the leader's type. That is, none of the players know the leader's type at the policy recommendation stage.

The leader has two concerns: reputational concern and policy concern. On one hand, they care about their image of being congruent among voters; on the other hand, they have their own preferences towards policies, which may or may not coincide with those of the voters. The leader, ex ante, is not sure what their ideal policies are, and this uncertainty gives the leader adaptation incentives when choosing what policy guidance to give to local agents. They also wish to manipulate voters' beliefs through the policy choices of local agents.

Timeline. The timeline of the game is as follows: Nature determines the state of the world and the leader's type. At this stage, players of the game have no knowledge of either piece of information. The leader then receives a private signal regarding their own ideal policy. Based on this signal, the leader sends a policy recommendation to two local agents, who may agree or disagree with the leader's guidance. The local agents then choose policy pilots for each district, and the policy outcomes are revealed. Policies may be popular or unpopular among voters, and everyone observes the outcomes. The central leader learns their ideal policy and decides whether to endorse or veto the policy pilots chosen by the local agents. Voters observe both the policy chosen by the local agents and the leader's endorsement or veto decisions, updating their beliefs about the leader. Payoffs are then realized, and the game ends.

Vague policy and experimentation. In our model, policy experimentation occurs when different local agents try different policies. While a clear message ensures that consenting agents follow the policy recommendation, it also discourages dissenting agents from deviating from the policy recommendation. As a result, to encourage experimentation, policy guidance from the leader cannot be too clear and is inherently vague.[3]

Non-monotonic impact of reputational concern on experimentation. Given the above, to understand the optimal policy vagueness for the leader, it essentially boils down to understanding the leader's preference for experimentation. In our model, leaders are driven by two concerns: reputational concern and policy concern. Since leaders do not know what their ideal policies are ex ante, a policy-driven leader would choose experimentation over uniform policies, resulting in a preference for vague policies over clear ones. On the other hand, since leaders can hide behind vague policies when pilot policies turn out to be unpopular, a reputation-driven leader also prefers vagueness over clarity due to plausible deniability. In other words, policy vagueness prevails when the leader is either very or minimally concerned about their reputation.

Most surprisingly, when vagueness is the dominant choice for leaders highly concerned with either

[3]Although previous literature focuses on the effect of vague policy directly on voters, the gist here is the same: to unite aligned voters while not losing appeal to misaligned voters. While voter preference uncertainty is needed in Glazer (1990), we show that when a policy announcement is non-committal, policy vagueness can occur even when there is no uncertainty regarding receivers' preferences, and we can view local agents as voters in this context. The motivational effect can also follow from the logic of Prendergast (1993). Since agents tend to agree with the principal, to motivate information acquisition, a left unsaid message in that paper is that it is best to keep the principal's signal private and unknown to the agent.

reputation or policy, an incentive for clarity can emerge due to a tradeoff between the two. This occurs because there is a conflict when the leader attempts to advance both goals simultaneously. Therefore, as reputational concern increases from minimal to moderate to dominant, the reputational constraint on the leader to advance their policy goal becomes increasingly stringent, until eventually the policy goal is superseded by reputational concern.

But how does a uniform policy help slacken the leader's reputational constraint? This is because, in situations where policy pilots turn out to be unpopular, voters' beliefs about a leader being congruent are lower under a uniform policy than under experimentation. In other words, mistakes are more transparent under a uniform policy. However, this also means the reputational loss for pursuing the leader's ideal policy is lower. Thus, voters' adversarial beliefs become a blessing for incongruent leaders in such situations, allowing them to extract rent at a lower cost.

To summarize, while experimentation (and thus vague policy) provides leaders with more flexibility, it also places a tighter reputational constraint on non-congruent leaders to extract rent when reputational concern is moderate. As a result, an incentive for a uniform policy (and thus a clear message) can arise in this situation. Given the above, it is also intuitive to see that clear messages are more likely to dominate vague ones when the priors for a leader being a non-congruent type are high, when the leaders are less uncertain about their ideal policies, and when the payoff from rent extraction is relatively high.

Ex ante accountability and ex post flexibility. In addition to the impact of reputational concern, our paper also examines how ex ante congruency (the prior of a leader being congruent) affects policy vagueness. Ex ante congruency can be thought of as measuring the level of ex ante accountability or democracy, and policy vagueness can be thought of as ex post flexibility. Before any formal analysis, one might argue that less democratic countries tend to have vaguer policies, or the opposite conjecture could be made. We find that the impact of ex ante congruency depends on the level of reputational concerns. When reputational concern is large, ex post flexibility increases with ex ante accountability; and when reputational concern is small, ex post flexibility decreases with ex ante accountability.

The intuition lies in answering another interesting question: who is more committed to policy guidance, more congruent leaders or less? We find that under experimentation, it is the congruent leaders who are more committed to their stated policy, whereas under uniform policy, it could be the incongruent leaders who are more committed. Additionally, the more reputationally concerned incongruent leaders are, the less committed they are.

Recall that to encourage experimentation, the consenting agent likes commitment, whereas the dissenting agent dislikes it. Thus, when reputational concern is strong, leaders wish to encourage experimentation. Because congruent leaders are more committed on the equilibrium path, the more congruent leaders there are ex ante, the more stringent the dissenting agent's incentives to not follow policy recommendations are, and the vaguer the messages must be. However, when reputational concern is weak, it can be the incongruent leaders who are more committed (under uniform policy). In other words, increasing ex ante congruency makes the deviating option less appealing, i.e., the incentive constraints for dissenting agents to not follow policy recommendations become easier to satisfy, and the clearer the messages can be.

Social welfare and reputational concern. Social welfare also changes non-monotonically with the

leader's reputational concern. In each regime, i.e., uniform policy or experimentation, social welfare decreases as reputational concern decreases. When reputational concern lowers to the point that the leader prefers experimentation to uniform policy again, and since social welfare is lower under uniform policy than under experimentation, ceteris paribus, we see a jump in social welfare when we decrease reputational concern. This is where the non-monotonicity comes from. Further, our analysis shows that policy vagueness has very different welfare implications depending on the leader's reputational concern. When reputational concern is either very high or very low, policy vagueness dominates, but social welfare is higher when reputational concern is high rather than low.

Loyalty concern. We also extend our model in several dimensions. In one of our extensions, we discuss a situation in which policy vagueness can arise due to loyalty concerns. In such cases, agents' policy positions or loyalty to the leaders are uncertain. Vague policies can help screen loyal agents from disloyal ones, but the leader suffers from delayed implementation. The equilibrium choice of policy vagueness strikes a balance between the two.

Message observability. Another extension that we examine is about message observability. In our baseline model, we assume that voters cannot observe the messages that leaders send to agents, but only the policy choices of agents. In one extension, we find that when leaders' messages are directly observable to voters, the leader can signify their intentions (i.e., the signal that they receive) even under experimentation, which was hidden behind diverse policies when messages are not directly observable to voters. This increases the incentives for experimentation. Ceteris paribus, policies tend to be vaguer compared to the case when messages are not directly observable to voters. We also discuss the case in which voters only observe their regional policy, but not that of the other region. We show that in this case, vague policies always dominate because the leader can no longer manipulate voters' beliefs using the diversity of policies.

Implications. Our theory provides insights into policy vagueness across various settings. For instance, in organizational contexts, a CEO or manager's years in their tenure can serve as a proxy for their reputational concern (as in Gibbons and Murphy (1992)), and the level of discretion given to subordinates as a proxy for policy vagueness. A testable hypothesis from our model is that managers in the early or late stages of their careers tend to grant more discretion to subordinates, while those in the middle of their careers are more likely to provide clear directions.

The rest of the paper is organized as follows: We review the literature in the next section. Section 2 introduces the model; Section 3 analyzes the results. Section 4 generalizes and extends the model. Section 5 discusses several applications of our theory and Section 6 concludes the paper.

1.1 Literature review

Policy vagueness in political economy. Ever since Downs (1957) (and later Shepsle (1972), Page (1976)), policy vagueness has invited extensive attention in the political economics literature. Policies can be vague because voters are risk-loving (Zeckhauser (1969)) or behavioral (Callander and Wilson (2008)); they can also be vague because politicians are uncertain of voters' preferences (Glazer (1990)), they want to induce favorable beliefs about their ex post policy choice (Aragones and Postlewaite (2002)), they face

a tradeoff between re-election and implementing their preferred policy (Alesina and Cukierman (1990)), they want to obfuscate voters when their attention is limited (Dewan and Myatt (2008)), or when they can differentiate their policy positions and afford to be ambiguous (Aragones and Neeman (2000)). On the other hand, policy clarity can arise when the opposite of the above happens, when politicians want to signal commitment (Morelli, Nicolò and Roberti (2021)) or competence (Frenkel (2014)), or when they want to attract sympathetic voters (Basu and Knowles (2017)). Others focus on how candidates' partisanship (Bräuninger and Giger (2018)) or party position (Galindo-Silva (2024)) may affect policy ambiguity. Last but not least, there are also empirical and experimental works on policy vagueness (e.g., Feltovich and Giovannoni (2024), Cahill and Stone (2018), Ang (2024)). Since our paper is mainly theoretical, we refer readers to Lefevere (2024) for a recent survey.

Vague communication in organizations. As a pioneer in almost any field, Arrow (1974) discusses how language helps us understand the limits of organizations. Cremer, Garicano and Prat (2007) analyze how the coordination versus specialization tradeoff affects the use of "codes" in organizations and their implications for organizational design. Eisenberg (1984) discusses the reasons for vague language in the corporate environment and Williams (1975) how a leader's traits can affect the adoption of ambiguous communication in organizations. Blume and Board (2013) analyze how speaker competence can affect language vagueness, and Mialon and Mialon (2013) discuss analytical conditions for speech to be figurative and yield comparative statics results, e.g., a greater benefit to the listener of correctly understanding the speaker increases the benefits of figurative speech.[4] Another related literature is the cheap talk literature. For instance, Morris (2001) and Ottaviani and Sørensen (2006) show that introducing reputation to Crawford and Sobel (1982) not necessarily give rise to truth-telling. Morris (2001) find when the sender cares sufficiently about reputational, no information will be conveyed. Whereas we focus on the tradeoff between reputational concern and policy concern and we find a non-monotonic impact of reputation. In Ottaviani and Sørensen (2006), the focus is on the impact of information structure whereas ours is the tradeoff between reputational and policy concern.

Non-economic literature. Our paper is related to and heavily inspired by linguistic and philosophy literature, particularly their analyses on language vagueness and the concept of plausible deniability (e.g., Pinker (2007); Pinker, Nowak and Lee (2008); Camp (2018), among others).

Our contribution and most related papers. Our paper differs from previous literature as we emphasize how a tradeoff between adaptation to new information and reputation (being perceived as congruent) concerns affects policy vagueness. Kartik, Van Weelden and Wolton (2017) is related to our first adaptation concern. They examine the merits of policy vagueness in a delegation model, where state-relevant information arrives at a later stage, allowing room for ex post adaptation. Politicians may have their own ideal policies, resulting in voters facing a tradeoff between adaptation and accountability when designing the policy set that politicians can choose from. Frenkel (2014) and Li (2010) are related to our second reputational concern. Frenkel (2014) examines the impact of reputation, focusing on competence concerns, whereas we focus on congruence concerns. Li (2010) analyzes how the blame-sharing motive drives politicians to peddle

[4]There are also other economic analyses on language vagueness, such as Lipman (2009) and Parikh (2010), and we leave a comprehensive review of these works outside the scope of this paper.

their influence through intermediaries.

The novelty of our model resides not only in analyzing a tradeoff between adaptation concerns and reputational concerns, but more importantly, in finding that although policy vagueness is a dominant choice when either concern dominates, an incentive for clarity can arise due to the tradeoff between the two.

Our paper is also related to studies that discuss the impact of reputational concerns on experimentation. Most relatedly, Cheng and Li (2019) examine how reputational concerns lead to different policy choices (uniform versus diverse) under centralization and decentralization.[5] The comparative statics in that paper focus on political regimes (centralization versus decentralization), whereas ours focus on the degree of reputational concern. Additionally, the channels that lead to experimentation and uniform policy are quite different in these two papers.

2 The Model

Setup. The economy consists of a central leader, two local agents ($i = 1, 2$), and a continuum of citizens. The state of the economy θ is either 1 or -1, with an equal probability. The leader decides on an economic policy, taking value of 1 or -1, through a policy-making process. The citizens want the policy to match the state of the economy. The leader, as a policy maker, has her preferred policy (type) $\theta_c \in \{1, -1\}$. The leader is said to be *congruent* if her preferred policy matches the state of the economy ($\theta_c = \theta$) and *non-congruent* otherwise. Each local agent has his own preferred policy (type), denoted by θ_1 and θ_2. It is common knowledge that $\theta_1 = 1$ and $\theta_2 = -1$.

Timeline. The policy-making process is illustrated in Figure 1. The game begins with the nature's move that determines θ with $P(\theta = 1) = 1/2$ and θ_c with $P(\theta_c = \theta) = \alpha \in (0, 1)$. The parameter α is the leader's ex ante congruency. The leader then receives a private signal $s \in \{1, -1\}$ about her type, with $P(s = \theta_c) = \gamma \in (1/2, 1)$. The signal precision γ measures to what extent the leader knows ex ante about her type and can be interpreted as the leader's competence. After receiving the signal, the leader sends policy guidance (a message) $m \in \{1, -1\}$ to the agents, with $P(m = s) = 1 - \nu$.[6] The leader's choice variable $\nu \in [0, 1/2]$ captures the degree of *vagueness* of the message. A larger ν means a vaguer message. When ν attains its maximum 1/2, the message is completely uninformative about the leader's private signal s, whereas when $\nu = 0$, the message perfectly reveals the signal.

Upon receiving the policy guidance, each local agent chooses a policy to pilot. Denote agent i's policy pilot by $x_i \in \{1, -1\}$. When both agents pilot the same policy, we refer to this scenario as *uniform* pilots. When the agents pilot two different policies, we refer to this scenario as *diverse* pilots. After policy pilots are implemented, the state of the economy θ is fully revealed to all players. In addition, the leader learns perfectly about her type θ_c.[7]

[5] We refer readers to the references therein for other papers on reputational concerns and experimentation that are less related to our analysis here.

[6] In the baseline setup, the message m is not observable by the citizens. It is natural to assume that the internal intra-governmental communication is usually not observed by the public. We will discuss how our main results extend when the message is also observable to the citizens.

[7] Because there are only two possible states, even in the case of uniform pilots, the true state would be revealed. In this baseline setup, we abstract from the cost of policy pilots for agents and also the possibility that policy pilots may fail to reveal information

Upon learning θ and θ_c, the leader makes the final policy decision $x_c \in \{x_1, x_2, 0\}$. In other words, the leader can not endorse a policy which has not been piloted. More specifically, if both policies have been piloted, the leader can endorse either policy 1 or -1 ($x_c = 1, -1$), or veto both policies ($x_c = 0$). If only policy j has been piloted, the leader can either endorse the policy ($x_c = j$) or veto the policy ($x_c = 0$). After the final policy decision is made, payoffs are realized.

Payoffs. The leader's payoff π_c has two components: rent and reputation. It is specified as following:

$$\pi_c = r + \beta\eta,$$

where the rent $r = 1$ if the final policy $x_c = \theta_c$ and $r = 0$ otherwise; η captures the reputation and is defined the citizens' posterior belief about the leader being congruent, i.e., $\eta = Posterior(\theta_c = \theta)$; the parameter β measures the degree of reputation concern, playing a central role in our analysis.

Agent i's payoff π_i also consists of two parts. If the policy agent i pilots is endorsed by the leader, agent i derives a return of B, and if the endorsed policy x_c is agent i's preferred policy θ_i, agent i derives an extra return of b. There are several ways to interpret B and b. For example, the parameter B can be interpreted as career benefits because the leader's endorsement may enhance the chance of career progression, whereas the parameter b can be interpreted as subjective utility gains if agent biases stem from ideological differences. If agent i's pilot is not endorsed, his return $\pi_i = 0$.

The citizens' payoff, interpreted as social welfare (denoted by W), is 1 if the final policy matches the state of the world, i.e., $x_c = \theta$; -1 if $x_c = -\theta$; and 0 if the leader takes inaction ($x_c = 0$). A policy is said to be *popular* if it matches the state θ and *unpopular* otherwise.

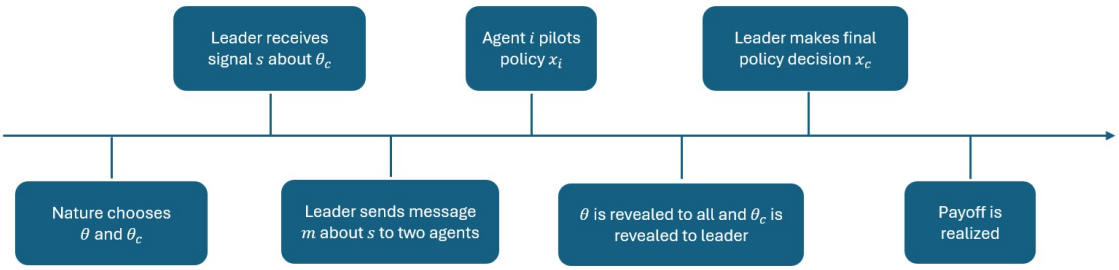


Figure 1: The Timeline

Equilibrium definition. Agent i's strategy is described by a mapping x_i from $[0, 1/2]$ (v) to $\{1, -1\}$. The leader's strategy is described by a pair (v, x_c), where v is a mapping from $s \in [1, -1]$ to $[0, 1/2]$; and x_c is a mapping from $[0, 1/2] \times \{1, -1\}^4$ $(v, x_1, x_2, \theta, \theta_c)$ to $\{0, x_1(v), x_2(v)\}$. A pure-strategy (perfect Bayesian) equilibrium of this model is defined as a strategy profile $\{v, x_c, x_1, x_2\}$ that satisfies the following:

(i) Given x_1 and x_2, the leader picks x_c to maximize π_c for any v, and picks v to maximize π_c ex ante.

(ii) Given v and x_c, agent i picks x_i to maximize π_i.

(iii) The posterior belief η is formed through the Bayes' rule.

about the true state. We discuss those cases in Section 4.

In our equilibrium characterization, we allow the leader to choose a mixed strategy when making the final policy decision.

3 The Main Results

Recall that our goal is to understand the leader's optimal choice of policy vagueness. Our key finding is that while vagueness tends to dominate when the leader is primarily driven by either reputational or rent concerns, an incentive for clarity can emerge from a tradeoff between the two. The core intuition is that these concerns are in conflict. Thus, when they are balanced, increasing the leader's reputational concern acts like imposing a tighter constraint on rent extraction. The remaining question is why clarity helps relax this constraint. The reason is that when the message is clear, mistakes become more transparent, which, in turn, lowers voters' beliefs about the leader being congruent before the leader makes the final decision to endorse or veto a pilot. In other words, when there is a tradeoff between rent and reputation, sending a clear message helps ease the reputational constraint on rent extraction. This insight helps us understand the non-monotonic impact of reputational concerns on policy vagueness. With this high-level intuition, we now proceed to a detailed analysis of the equilibrium.

3.1 Equilibrium Characterization

The game consists of three stages that involve strategic decisions. The final stage: the leader makes the final policy decision x_c, trading off rent with reputation. The second stage: observing the message m and the vagueness level v, each agent makes a pilot decision in anticipation of x_c. The first stage: the leader chooses vagueness level v to maximize her expected payoff.

Before fully analyzing the equilibrium, it is important to note that the level of vagueness influences the agents' pilot choices—specifically whether the pilots are uniform or diverse—which, in turn, impacts the leader's tradeoff between reputation and rent in the final stage.

How would vagueness affect the diversity of the pilots? Given the agent's incentive structure, it is intuitive that a clearer message tends to encourage uniform pilots, while a vaguer message leads to more diverse pilots. When the message is clear, agents anticipate that the leader is more likely to implement the policy guidance in the final stage, and following the recommendation increases the likelihood of endorsement. In contrast, when the message is vague, agents are more inclined to pursue their own policy agendas, resulting in greater diversity among the pilots.

Understanding the above, it remains to see how the diversity of pilots affects the leader's tradeoff between reputation and rent in the final stage. We now solve the game by backward induction. To focus on our key result, in the baseline model, we assume $\alpha > 2/3$ and $b = B/3$.[8]

Final Policy Decision

[8]We assume $\alpha > 2/3$ in the baseline setting to circumvent some technical complications in the discussion of the agents' incentive compatibility constraints. We will discuss the implications when $\alpha \leq 2/3$. We let $b = B/3$ so that the main results of the paper can be delivered in the sharpest manner.Our main results carry over when the ratio b/B is neither too small or too large. We will provide for general b and B a comprehensive characterization of agents' incentive compatibility constraints, and discuss how our main results change when b is either very small or very large.

We start with the stage of the final policy decision. There are two possibilities at this stage: (i) both policies are piloted (diverse pilots); (ii) only one pilot (denoted by j) is piloted (uniform pilots).

In the case of diverse pilots, the congruent leader's dominants strategy is simply $x_c = \theta$, whereas the non-congruent leader faces a tradeoff between rent and reputation. If the non-congruent leader chooses her preferred policy $x_c = \theta_c$, the citizens' posterior about her being congruent (reputation) is zero, so her payoff is given by $\pi_c = 1$. If the non-congruent leader chooses the citizens' preferred policy $x_c = \theta$, then she forgoes rent for reputation, so her payoff is given by $\pi_c = \beta\eta_2$, where η_2 is the equilibrium reputation conditional on a popular policy being chosen in the case of diverse pilots.

Note η_2 is an endogenous object to be solved. There are three cases. If $\beta\eta_2 < 1$, then the equilibrium reputation is too low, so the non-congruent leader always picks her preferred policy. in this case, the leader's final policy choice fully reveals her type so $\eta_2 = 1$. If $\beta\eta_2 > 1$, then the equilibrium reputation is sufficiently high such that the non-congruent leader mimics the congruent leader by always picking the popular policy. The leader's policy choice thus reveals no information about her type. Since in the case of diverse pilots, the agents' policy pilots also reveal no information about the leader's type, the equilibrium reputation η_2 is the same as the prior belief α. Last, if $\beta\eta_2 = 1$, the leader is indifferent and plays a mixed strategy. Denote by p_2 the probability for the non-congruent type to veto the unpopular policy and pick the popular policy in the case of diverse pilots. According to the Bayes' rule,

$$\eta_2 = \frac{\alpha}{\alpha + (1-\alpha)p_2}. \tag{1}$$

To summarize, in the case of diverse pilots, the non-congruent leader's veto probability p_2 is given by

$$p_2 = \begin{cases} 0, & \text{if } \beta < 1 \\ \frac{\alpha}{1-\alpha}(\beta - 1), & \text{if } 1 \leq \beta \leq \frac{1}{\alpha} \\ 1, & \text{if } \beta > \frac{1}{\alpha} \end{cases}. \tag{2}$$

We now consider the case of uniform pilots. When the piloted policy turns out to be popular, both types of the leader would pick that policy because in this case, the preferred policy for the non-congruent leader is not available. When the piloted policy turns out to be unpopular, the congruent leader vetoes that policy whereas the non-congruent leader faces a tradeoff between reputation and rent. Denote by η_1 the equilibrium reputation conditional on an unpopular policy being vetoed in the case of uniform pilots, and by p_1 the probability for the non-congruent type to veto the unpopular policy in the case of uniform pilots. Importantly, when the citizens observe that both agents pilot the same policy, they can infer in the equilibrium that the leader's message $m = x_1 = x_2$, which stands in sharp contrast with the case of diverse pilots where the policy pilots do not reveal the leader's message.[9] In particular, if $\beta\eta_1 = 1$ such that the non-congruent leader plays a mixed strategy, the equilibrium reputation is given by

$$\eta_1 = \frac{\alpha(1-p_v)}{\alpha(1-p_v) + (1-\alpha)p_v p_1}, \tag{3}$$

[9]We will analyze the agents' policy pilot decisions in what follows.

where p_v is the probability that the leader's message m is her true type θ_c, defined as

$$p_v \equiv \gamma(1-v) + (1-\gamma)v \tag{4}$$

The analysis of the leader's decision is similar to that for the case of diverse pilots. We can show

$$p_1 = \begin{cases} 0, & \text{if } \beta < 1 \\ \frac{\alpha(1-p_v)}{(1-\alpha)p_v}(\beta - 1), & \text{if } 1 \leq \beta \leq \frac{\alpha(1-p_v)+(1-\alpha)p_v}{\alpha(1-p_v)} \\ 1, & \text{if } \beta > \frac{\alpha(1-p_v)+(1-\alpha)p_v}{\alpha(1-p_v)} \end{cases} . \tag{5}$$

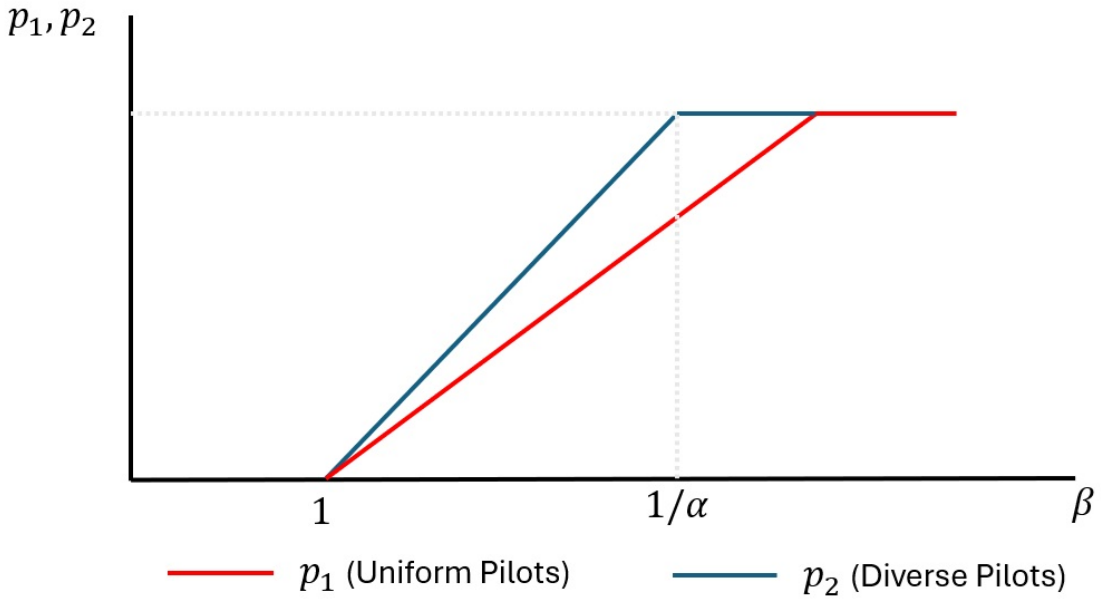


Figure 2: Probability of Vetoing the Unpopular Policy and Reputation Concern

Figure 2 illustrates the probability for the non-congruent to veto the unpopular policy for both uniform and diverse pilots. Intuitively, the veto probability is (weakly) increasing with the degree of reputation concern. When $v = 1/2$, the piloted policy becomes uninformative even in the case of uniform pilots, and as a result, the two lines in the diagram would overlap with each other. When $v < 1/2$, since the piloted policy reveals some information about the leader's type, the non-congruent leader already experiences some loss in reputation even before making the final policy decision, resulting in weaker incentives to veto the unpopular policy. Such incentives are strictly weaker when β is in some intermediate range so that the leader does not always forgoes reputation for rent nor vetoes the unpopular policy to boost reputation with certainty. As will be made clearer, the fact that $p_1 < p_2$ at an intermediate level of β is key to the non-monotonic relationship between policy vagueness and reputation concern.

Policy Pilot Choice

Each agent's policy pilot choice is based on the probability of a pilot to be endorsed by the leader and

whether such a pilot is aligned with the agent's preferred policy. When the leader sends vague policy guidance, agents tend to pilot their preferred policies because the leader's preference is unclear under vague guidance. When the leader sends clear policy guidance, agents tend to follow her guidance because it likely the pilot to be endorsed under clear guidance. We provide a formal and comprehensive discussion of the agents' incentive compatibility constraints in Section 4. For now, we note that in our baseline setting, when γ is high, the IC constraints for both diverse and uniform pilots can be satisfied for any β.

Lemma 1 *Let $\gamma > 1/(2-\alpha)$. If the leader sends vague policy guidance with $\nu = 1/2$, agent i pilots $x_i = \theta_i$. If the leader sends clear policy guidance with $\nu = 1$, both agents pilot according to the leader's message m.*

Policy Vagueness

We now turn to the first stage of the game in which the leader's decides the optimal vagueness for her. The following lemma establishes a simple form for the leader's expected payoff.

Lemma 2 *The leader's ex ante expected payoff is given by $E(r|\nu) + \beta\alpha$, where $E(r|\nu)$ is the expected rent for a given level of policy vagueness ν.*

Since reputation is defined as the posterior belief about the leader being congruent, the expected reputation is simply ex ante congruency α by the Bayes' rule. According to this lemma, the optimal ν for the leader maximizes the probability of rent extraction.

A vague policy, which induces diverse pilots, affects the probability of rent extraction through two channels. On the one hand, diverse pilots increase the chance for the congruent leader to implement her preferred policy. On the other hand, the non-congruent leader faces ex post stronger incentives to veto her preferred but unpopular policy. When β is either sufficiently small or large, the second channel is inactive so the leader sends vague policy guidance to induce diverse pilots; when β is at some intermediate level, the second channel is active and can potentially dominate, thereby incentivizing the leader to send clear policy guidance to induce uniform pilots.

Formally, in the case of diverse pilots, the leader's expected payoff is $E\pi_c = \alpha + (1-\alpha)(1-p_2) + \beta\alpha$. Plugging in the expression of p_2 in (2), we have

$$E\pi_c = \begin{cases} 1+\beta\alpha, & \text{if } \beta < 1 \\ 1+\alpha, & \text{if } 1 \leq \beta \leq \frac{1}{\alpha} \\ \alpha+\beta\alpha, & \text{if } \beta > \frac{1}{\alpha} \end{cases}, \tag{6}$$

Notably, $E\pi_c$ is independent of ν in the case of the diverse pilots. However, as we have shown, the IC constraints for the diverse pilots are easiest to be satisfied when $\nu = 1/2$. We simply let the leader pick $\nu = 1/2$ when she is indifferent.

In the case of uniform pilots, the leader's expected payoff is $E\pi_c = p_\nu[\alpha + (1-\alpha)(1-p_1)] + \beta\alpha$, where we recall p_ν is the probability that the leader's message m is the same as her type. Plugging in the expression

of p_1 in (5), we have

$$E\pi_c = \begin{cases} p_v + \beta\alpha, & \text{if } \beta < 1 \\ \alpha + p_v(1-\alpha+\beta\alpha), & \text{if } 1 \le \beta \le \frac{\alpha(1-p_v)+(1-\alpha)p_v}{\alpha(1-p_v)} \\ p_v\alpha + \beta\alpha, & \text{if } \beta > \frac{\alpha(1-p_v)+(1-\alpha)p_v}{\alpha(1-p_v)} \end{cases}. \tag{7}$$

We can show that $E\pi_c$ strictly decreases with v in the case of uniform pilots. Let $v = 0$. Then $p_v = \gamma$, and the equation above is reduced to

$$E\pi_c = \begin{cases} \gamma + \beta\alpha, & \text{if } \beta < 1 \\ \alpha + \gamma(1-\alpha+\beta\alpha), & \text{if } 1 \le \beta \le \frac{\alpha(1-\gamma)+(1-\alpha)\gamma}{\alpha(1-\gamma)} \\ \gamma\alpha + \beta\alpha, & \text{if } \beta > \frac{\alpha(1-\gamma)+(1-\alpha)\gamma}{\alpha(1-\gamma)} \end{cases}. \tag{8}$$

Figure 3 illustrates the leader's expected payoff for the two cases. Since $\gamma < 1$, the diverse pilots yield higher expected payoff when the degree of reputation concern β is high or low enough. The gap in the expected payoff shrinks and can potentially change signs when β is at some intermediate level. In particular, the non-monotonic effect of β on the expected payoff emerges when γ satisfies $\gamma > 1/(2-\alpha)$.

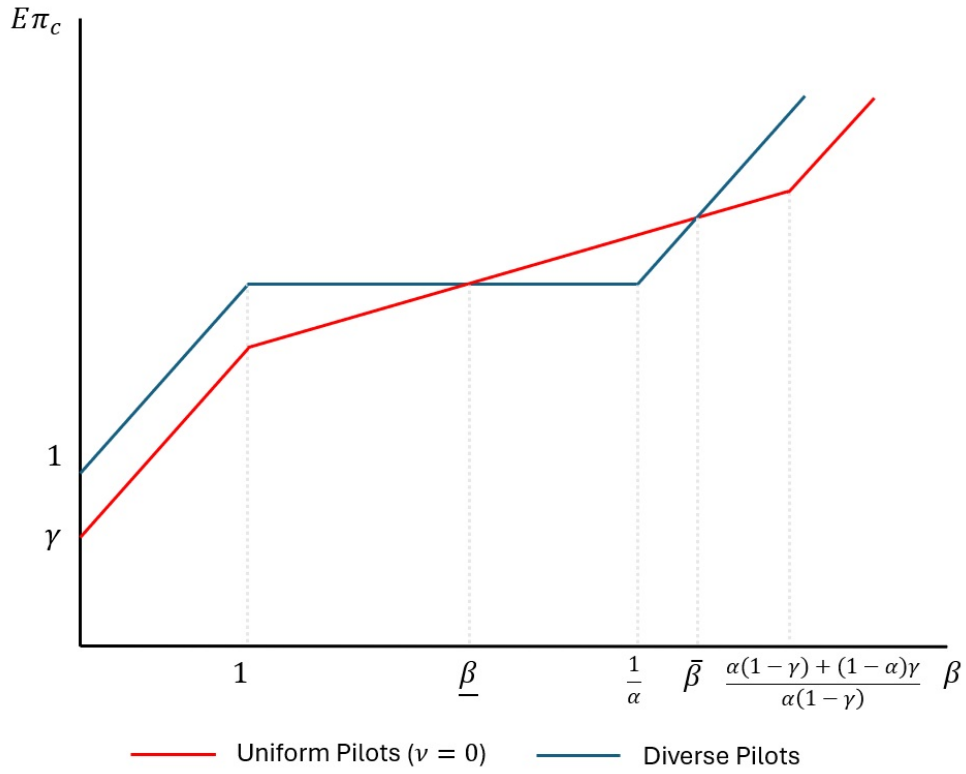


Figure 3: The Leader's Expected Payoff: Uniform vs Diverse Pilots

Proposition 1 *Let $\gamma > 1/(2-\alpha)$. The leader issues vague policy guidance ($v = 1/2$) when the degree of reputation concern β is either low or high enough, and clear policy guidance ($v = 0$) otherwise.*

Proof. See Appendix.

Social Welfare

The expected social welfare depends on whether diverse or uniform pilots are implemented in the equilibrium. In the case of diverse pilots, the expected social welfare is given by

$$W_2 = \begin{cases} 2\alpha - 1, & \text{if } \beta < 1 \\ 2\alpha\beta - 1, & \text{if } 1 \leq \beta \leq \frac{1}{\alpha} \\ 1, & \text{if } \beta > \frac{1}{\alpha} \end{cases}, \tag{9}$$

whereas in the case of uniform pilots with $\nu = 0$, the expected social welfare is given by

$$W_1 = \begin{cases} \alpha\gamma + (1-\alpha)(1-\gamma) - (1-\alpha)\gamma, & \text{if } \beta < 1 \\ \alpha\gamma + (1-\alpha)(1-\gamma) - (1-\alpha)\gamma + \alpha(1-\gamma)(\beta-1), & \text{if } 1 \leq \beta \leq \frac{\alpha(1-\gamma)+(1-\alpha)\gamma}{\alpha(1-\gamma)} \\ \alpha\gamma + (1-\alpha)(1-\gamma), & \text{if } \beta > \frac{\alpha(1-\gamma)+(1-\alpha)\gamma}{\alpha(1-\gamma)} \end{cases}. \tag{10}$$

It is straightforward to show $W_2 > W_1$ for any β. This is because the diverse pilots facilitate policy discovery and also introduce stronger incentives for the leader to veto the unpopular policy ex post. From Proposition 1, the expected social welfare changes discontinuously and non-monotonically with the reputation concern. Figure 4 illustrates how the expected equilibrium social welfare changes with the degree of reputation concern. Importantly, an increase in reputation concern can produce discontinuous change in the expected social welfare when such an increase causes a shift in policy pilots.

4 Generalization and Extensions

4.1 The Agents' Incentive Compatibility Constraints

We turn to the verification of the agents incentive compatibility (IC) constraints when they decide on which policy to pilot. In the case of diverse pilots, the agent with $\theta_i = m$ pilots his preferred policy if

$$\{p_\nu[\alpha + (1-\alpha)(1-p_2)] + (1-p_\nu)(1-\alpha)p_2\}(B+b) > \{(1-p_\nu)[\alpha + (1-\alpha)(1-p_1')] + p_\nu(1-\alpha)\}B, \tag{11}$$

where p_2 is the probability for the non-congruent leader to endorse the popular policy in the case of diverse pilots, which is given by (2), and p_1' is the probability of the non-congruent type endorsing the popular policy when both agents pilot the policy $(-m)$. It should be noted that p_1' is off the equilibrium path and to be specified. Next, the agent with $\theta_i = -m$ pilots his preferred policy if

$$\{(1-p_\nu)[\alpha + (1-\alpha)(1-p_2)] + p_\nu(1-\alpha)p_2\}(B+b) > \{p_\nu[\alpha + (1-\alpha)(1-p_1)] + (1-p_\nu)(1-\alpha)\}B. \tag{12}$$

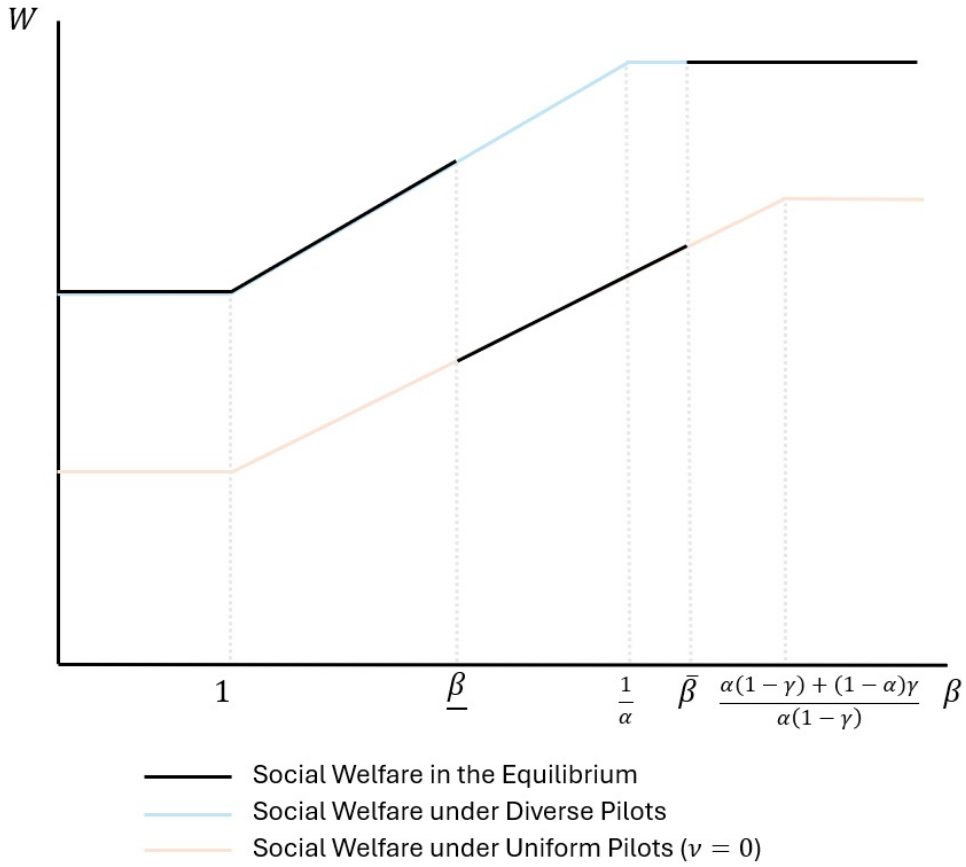


Figure 4: Expected Social Welfare and Reputation Concern

More explicitly, the IC constraints for diverse pilots can be written as

$$\frac{\gamma(1-\nu)+(1-\gamma)\nu-(1-\alpha)(2\gamma-1)(1-2\nu)p_2}{\alpha[(1-\gamma)(1-\nu)+\gamma\nu]+(1-\alpha)-(1-\alpha)[(1-\gamma)(1-\nu)+\gamma\nu]p_1'} > \frac{B}{B+b} \tag{13}$$

$$\frac{(1-\gamma)(1-\nu)+\gamma\nu+(1-\alpha)(2\gamma-1)(1-2\nu)p_2}{\alpha[\gamma(1-\nu)+(1-\gamma)\nu]+(1-\alpha)-(1-\alpha)[\gamma(1-\nu)+(1-\gamma)\nu]p_1} > \frac{B}{B+b}, \tag{14}$$

In the case of uniform pilots, the agent with $\theta_i = m$ pilots his preferred policy if

$$\{p_\nu[\alpha+(1-\alpha)(1-p_1)]+(1-p_\nu)(1-\alpha)\}(B+b) > \{(1-p_\nu)[\alpha+(1-\alpha)(1-p_2)]+p_\nu(1-\alpha)p_2\}B, \tag{15}$$

and the agent with $\theta_i = -m$ pilots policy m if

$$\{p_\nu[\alpha+(1-\alpha)(1-p_1)]+(1-p_\nu)(1-\alpha)\}B > \{(1-p_\nu)[\alpha+(1-\alpha)(1-p_2)]+p_\nu(1-\alpha)p_2\}(B+b), \tag{16}$$

where p_1 is the probability for the non-congruent leader to veto the unpopular policy in the case of uniform pilots, which is given by (5). The two constraints can be reduced to

$$\frac{\alpha[\gamma(1-\nu)+(1-\gamma)\nu]+(1-\alpha)-(1-\alpha)[\gamma(1-\nu)+(1-\gamma)\nu]p_1}{(1-\gamma)(1-\nu)+\gamma\nu+(1-\alpha)(2\gamma-1)(1-2\nu)p_2} > \frac{B+b}{B}. \tag{17}$$

Note that (17) is (14) with the inequality reversed.

The determination of p_1' is trickier, because it is off the equilibrium path. There are two polar cases: (i) $p_1' = p_1$, or (ii) p_1' is determined by the comparison between rent (1) and reputation ($\frac{\beta\alpha p_\nu}{\alpha p_\nu+(1-\alpha)(1-p_\nu)p_1'}$), as if this case were on an equilibrium path. For (ii), when $1 > \frac{\beta\alpha p_\nu}{\alpha p_\nu+(1-\alpha)(1-p_\nu)p_1'}$, $p_1' = 0$; when $1 < \frac{\beta\alpha p_\nu}{\alpha p_\nu+(1-\alpha)(1-p_\nu)p_1'}$, $p_1' = 1$, and otherwise,

$$p_1' = \frac{\alpha p_\nu}{(1-\alpha)(1-p_\nu)}(\beta-1).$$

It is straightforward to show that $p_1' \geq p_2 \geq p_1$. Since p_1' only enters the IC constraint (13) and this constraint is more difficult to satisfy for a smaller p_1', we focus on (i) because if the IC is satisfied for (i), it would also be satisfied for (ii). Henceforth, we focus on the case of $p_1' = p_1$.

There are four cases concerning the degree of reputation: (a) $\beta \leq 1$; (b) $\beta \in (1, \frac{1}{\alpha})$; (c) $\beta \in [\frac{1}{\alpha}, \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)})$; (d) $\beta \geq \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)}$. We consider each of them in turn.

Case (a): For $\beta \leq 1$, $p_1 = p_2 = 0$. The IC constraints for the diverse pilots, (13) and (14), are reduced to

$$\frac{(1-\gamma)(1-\nu)+\gamma\nu}{\alpha[\gamma\nu+(1-\gamma)\nu]+(1-\alpha)} > \frac{B}{B+b},$$

which can be simplified as

$$p_\nu = \gamma(1-\nu)+(1-\gamma)\nu < \frac{\alpha B+b}{\alpha B+B+b}. \tag{18}$$

The IC constraint for the uniform pilots is simply the inequality above reversed.

Case (b): For $\beta \in (1, \frac{1}{\alpha})$, $0 < p_1 < p_2 < 1$. The IC constraints for the diverse pilots are given by

$$\frac{\gamma(1-\nu)+(1-\gamma)\nu-\alpha(2\gamma-1)(1-2\nu)(\beta-1)}{\alpha[(1-\gamma)(1-\nu)+\gamma\nu]+(1-\alpha)-\alpha\frac{[(1-\gamma)(1-\nu)+\gamma\nu]^2}{\gamma(1-\nu)+(1-\gamma)\nu}(\beta-1)} > \frac{B}{B+b} \tag{19}$$

$$\frac{(1-\gamma)(1-\nu)+\gamma\nu+\alpha(2\gamma-1)(1-2\nu)(\beta-1)}{\alpha[\gamma(1-\nu)+(1-\gamma)\nu]+(1-\alpha)-\alpha[(1-\gamma)(1-\nu)+\gamma\nu](\beta-1)} > \frac{B}{B+b}. \tag{20}$$

(20) can be simplified to

$$p_\nu = \gamma(1-\nu)+(1-\gamma)p_\nu < \frac{\alpha B+(1+\alpha)b-\alpha b\beta}{(1+2\alpha)(B+b)-\alpha(B+2b)\beta}, \tag{21}$$

where RHS can be shown to be strictly increasing with β. Because p_ν attains its minimum when $\nu = 1/2$, (21) is satisfied if and only if it is satisfied for $\nu = 1/2$. A complete characterization of (19) is very involved, but we note that when $\nu = 1/2$, (19) and (20) coincide. The IC constraint for the uniform pilots is the inequality (21) reversed.

Case (c): For $\beta \in [\frac{1}{\alpha}, \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)})$, $0 < p_1 < p_2 = 1$. The IC constraints for the diverse pilots are given by

$$\frac{\gamma(1-\nu)+(1-\gamma)\nu-(1-\alpha)(2\gamma-1)(1-2\nu)}{\alpha[(1-\gamma)(1-\nu)+\gamma\nu]+(1-\alpha)-\alpha\frac{[(1-\gamma)(1-\nu)+\gamma\nu]^2}{\gamma(1-\nu)+(1-\gamma)\nu}(\beta-1)} > \frac{B}{B+b} \tag{22}$$

$$\frac{(1-\gamma)(1-\nu)+\gamma\nu+(1-\alpha)(2\gamma-1)(1-2\nu)}{\alpha[\gamma(1-\nu)+(1-\gamma)\nu]+(1-\alpha)-\alpha[(1-\gamma)(1-\nu)+\gamma\nu](\beta-1)} > \frac{B}{B+b}. \tag{23}$$

The inequality (23) can be simplified to

$$p_\nu = \gamma(1-\nu)+(1-\gamma)\nu < \frac{(\alpha-1)B+\alpha b+\alpha B\beta}{(2\alpha-1)(B+b)+\alpha B\beta},$$

where RHS strictly increases with β. The inequality above always holds for $\nu = 1/2$ because RHS $> 1/2$ when $\beta = 1/\alpha$.

LHS of (22), viewed as a function of β, strictly increases with β, so if the inequality holds for $\beta = 1/\alpha$, it holds for any $\beta \in [\frac{1}{\alpha}, \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)})$. Let $\beta = 1/\alpha$ and recall $p_\nu = \gamma(1-\nu)+(1-\gamma)\nu \geq 1/2$. Then, the first inequality can be written as

$$[p_\nu-(1-\alpha)(2p_\nu-1)](B+b) > [\alpha(1-p_\nu)+1-\alpha-(1-\alpha)\frac{(1-p_\nu)^2}{p_\nu}]B,$$

which can be simplified as

$$f(p_\nu) \equiv [(2\alpha-1)(B+b)+B]p_\nu^2+[(\alpha-2)B+(1-\alpha)b]p_\nu+B(1-\alpha) > 0,$$

where $f(\cdot)$ is a quadratic function and attains its minimum when $p_\nu^* = \frac{(2-\alpha)B-(1-\alpha)b}{2[(2\alpha-1)(B+b)+B]}$. We have $p_\nu^* \leq 1/2$ if and only if $(2-3\alpha)B \leq \alpha b$. Since $f(1/2) > 0$, if $p_\nu^* \leq 1/2$, $f(p_\nu) > 0$ for any $p_\nu \geq 1/2$, implying that (22) holds for any ν. However, if $(2-3\alpha)B > \alpha b$, $p_\nu^* > 1/2$, and the sign of $f(p_\nu^*)$ is indeterminate. To see this, we rewrite

$f(\cdot)$ as

$$f(p_\nu) = (2p_\nu - 1)(\alpha p_\nu - (1-\alpha))B + [(2\alpha - 1)p_\nu^2 + (1-\alpha)p_\nu]b,$$

which is negative when $\alpha \in (\frac{1}{2}, \frac{2}{3})$, $p_\nu \in (\frac{1}{2}, \frac{1-\alpha}{\alpha})$, and b is small enough. Thus, if $(2-3\alpha)B > \alpha b$, there can be an interval in $(\frac{1}{2}, \frac{1-\alpha}{\alpha})$ for p_ν in which the inequality no longer holds.

In short, the IC constraints for the diverse pilots for Case (c) always hold for $\nu = 1/2$, but a complete characterization is more involved. The IC constraint for the uniform pilots is the inequality (23) reversed, given by

$$p_\nu = \gamma(1-\nu) + (1-\gamma)\nu > \frac{(\alpha-1)B + \alpha b + \alpha B\beta}{(2\alpha-1)(B+b) + \alpha B\beta},$$

Case (d): For $\beta \geq \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)}$, $p_1 = p_2 = 1$. the IC constraints for the diverse pilots are written as

$$\frac{\gamma(1-\nu) + (1-\gamma)\nu - (1-\alpha)(2\gamma-1)(1-2\nu)}{\alpha[(1-\gamma)(1-\nu) + \gamma\nu] + (1-\alpha) - (1-\alpha)[\gamma\nu + (1-\gamma)(1-\nu)]} > \frac{B}{B+b} \tag{24}$$

$$\frac{(1-\gamma)(1-\nu) + \gamma\nu + (1-\alpha)(2\gamma-1)(1-2\nu)}{\alpha[\gamma(1-\nu) + (1-\gamma)\nu] + (1-\alpha) - (1-\alpha)[\gamma(1-\nu) + (1-\gamma)\nu]} > \frac{B}{B+b} \tag{25}$$

The conditions can be simplified as

$$\frac{\alpha(2B+b) - (B+b)}{(2\alpha-1)(2B+b)} < \gamma(1-\nu) + (1-\gamma)\nu < \frac{\alpha(2B+b) - B}{(2\alpha-1)(2B+b)},$$

where the first inequality follows from (24) and the second follows from (25). Note that $\frac{\alpha(2B+b)-(B+b)}{(2\alpha-1)(2B+b)} < \frac{1}{2}$, and $\gamma(1-\nu) + (1-\gamma)\nu \geq \frac{1}{2}$, so the IC constraints for the diverse pilots can be further simplified as

$$p_\nu = \gamma(1-\nu) + (1-\gamma)\nu < \frac{\alpha(2B+b) - B}{(2\alpha-1)(2B+b)}, \tag{26}$$

which always holds for $\nu = 1/2$ because RHS $> 1/2$. The IC constraint for the uniform pilots is the inequality (26) reversed.

We now take stock of the four cases. Since the leader's expected payoff is independent of ν in the case of diverse pilots, and if the IC constraints for the diverse pilots are satisfied, they have to be satisfied for $\nu = 1/2$, we thus consider $\nu = 1/2$ for the IC constraints for the diverse pilots, which can simplified as

$$\frac{b}{B} > \begin{cases} 1-\alpha, & \text{if } \beta \leq 1 \\ 1-\alpha\beta, & \text{if } 1 < \beta < \frac{1}{\alpha} \\ 0, & \text{if } \beta \geq \frac{1}{\alpha} \end{cases}. \tag{27}$$

We collect the IC constraint for the uniform pilots:

$$\frac{B+b}{B} < \begin{cases} \frac{\alpha p_\nu + 1 - \alpha}{1-p_\nu}, & \text{if } \beta \leq 1 \\ \frac{\alpha p_\nu + 1 - \alpha - \alpha(1-p_\nu)(\beta-1)}{1-p_\nu + \alpha(2p_\nu-1)(\beta-1)}, & \text{if } 1 < \beta < \frac{1}{\alpha} \\ \frac{\alpha p_\nu + 1 - \alpha - \alpha(1-p_\nu)(\beta-1)}{1-p_\nu + (1-\alpha)(2p_\nu-1)}, & \text{if } \frac{1}{\alpha} \leq \beta < \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)} \\ \frac{\alpha p_\nu + (1-\alpha)(1-p_\nu)}{1-p_\nu + (1-\alpha)(2p_\nu-1)}, & \text{if } \beta \geq \frac{\alpha(1-p_\nu)+(1-\alpha)p_\nu}{\alpha(1-p_\nu)} \end{cases}, \tag{28}$$

where RHS can be shown to be strictly increasing with p_ν and thus strictly decreases with ν. Since the leader's expected payoff attains its maximum when $\nu = 0$ and the IC constraint is easiest to be satisfied also when $\nu = 0$ for the case of uniform pilots, we let $\nu = 0$ ($p_\nu = \gamma$) and the IC constraint for the uniform pilots is simplified as

$$\frac{b}{B} < \begin{cases} \frac{\alpha\gamma+\gamma-\alpha}{1-\gamma}, & \text{if } \beta \le 1 \\ \frac{\alpha\gamma+\gamma-\alpha-\alpha\gamma(\beta-1)}{1-\gamma+\alpha(2\gamma-1)(\beta-1)}, & \text{if } 1 < \beta < \frac{1}{\alpha} \\ \frac{3\alpha\gamma+1-\gamma-2\alpha-\alpha(1-\gamma)(\beta-1)}{1-\gamma+(1-\alpha)(2\gamma-1)}, & \text{if } \frac{1}{\alpha} \le \beta < \frac{\alpha(1-\gamma)+(1-\alpha)\gamma}{\alpha(1-\gamma)} \\ \frac{(2\alpha-1)(2\gamma-1)}{1-\gamma+(1-\alpha)(2\gamma-1)}, & \text{if } \beta \ge \frac{\alpha(1-\gamma)+(1-\alpha)\gamma}{\alpha(1-\gamma)} \end{cases}, \tag{29}$$

where RHS is decreasing with β. Define

$$\underline{b} \equiv \frac{(2\alpha-1)(2\gamma-1)}{1-\gamma+(1-\alpha)(2\gamma-1)}B \quad \text{and} \quad \bar{b} \equiv \frac{\alpha\gamma+\gamma-\alpha}{1-\gamma}B. \tag{30}$$

We note that $\bar{b} > \underline{b}$ and $\bar{b} > (1-\alpha)B$.

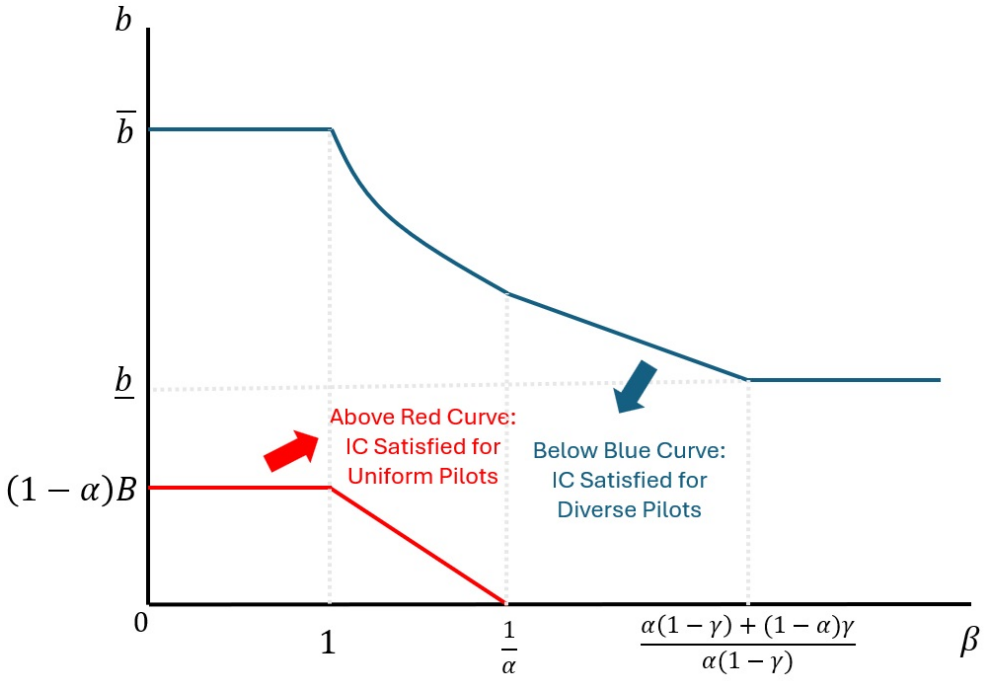


Figure 5: The IC Constrains for Uniform and Diverse Pilots

Figure 5 illustrates the admissible parameter range concerning the degree of reputation concern β and the agents' extra return b in which the IC constraints for uniform pilots with $\nu = 0$ and diverse pilots with $\nu = 1/2$. We claim when $\alpha > 2/3$, we have $\underline{b} > (1-\alpha)B$ for any $\gamma > 1/(2-\alpha)$. To see this, note that $\underline{b}$ is increasing with γ. For $\gamma = 1/(2-\alpha)$, we can show that for $\alpha > 2/3$,

$$(1-\alpha)B < \frac{(2\alpha-1)\alpha}{1-\alpha^2}B = \frac{(2\alpha-1)\left(\frac{2}{2-\alpha}-1\right)}{1-\frac{1}{2-\alpha}+(1-\alpha)\left(\frac{2}{2-\alpha}-1\right)}B = \underline{b}.$$

Figure 5 plots the case of $(1-\alpha)B < \underline{b}$. Next, we claim that $(1-\alpha)B < B/3 < \underline{b}$ for $\alpha > 2/3$ and $\gamma > 1/(2-\alpha)$. It is straightforward to see $(1-\alpha)B < B/3$ for $\alpha > 2/3$. Since $\underline{b}$ increases with γ, for any $\gamma > 1/(2-\alpha)$,

$$\underline{b} > \frac{(2\alpha-1)\alpha}{1-\alpha^2}B > \frac{B}{3},$$

where the last inequality holds for $\alpha > 2/3$. This result establishes that the IC constraints for both diverse and uniform pilots hold for any β when $\alpha > 2/3$ and $\gamma > 1/(2-\alpha)$.

4.2 Message Observability

In the baseline model, to simplify the analysis, we assume that the message m delivered by the leader to the local agents is not available to the citizen. In this section, we explore the implications of m being observable to the citizen. The analysis details are in appendix **??** and we find that the leader has stronger incentive to choose vague policy and induce agents to try experimentation when m is observable to the citizen. The intuition is simple. Observable m means a more transparency environment to the leader, driven by the reputation concern, given other things same, the leader has incentive to choose a vague disclosure rule to hide private idea.

4.3 Loyalty Concern

In baseline model, all of the agents are ex ante symmetric and the leader's objective is only to pick and implement one policy to obtain rent and reputation. In the real world, vague policy can also serve as a tool for the leader to test the loyalty of agents: when the leader does not clearly articulate his intentions, the agent who can infer the leader's intent will be entrusted with important responsibilities in the future. In this situation, selecting a loyal agent will enter the leader's objective function and the vague policy will become a selection tool. Loyalty concern can offer another channel to generate the leader's vague policy choice in the organization.

5 Applications

5.1 Reputational Concern and CEO/Manager Rhetoric

Our theory provides insights into policy vagueness across various settings. For instance, in organizational contexts, a CEO or manager's years in their tenure can serve as a proxy for their reputational concern (as in Gibbons and Murphy (1992)), and the level of discretion given to subordinates as a proxy for policy vagueness. A testable hypothesis from our model is that managers in the early or late stages of their careers tend to grant more discretion to subordinates, while those in the middle of their careers are more likely to provide clear directions.

5.2 Vertical Communication and Informal Accountability

The framework presented in this paper can be used to understand the phenomenon of leaders' "art of vertical communication" in various organizations. Ang (2024) has observed a similar phenomenon in the communication processes between superiors and subordinates within the Chinese Communist Party: identifying which directives must be executed clearly and which ones are relatively ambiguous.

According to the theory in this paper, a leader's choice to express directives clearly or ambiguously in vertical communication can be understood as an informal commitment to post-implementation flexibility. Although this informal commitment may not have the hard constraints of an implicit institution, it is the result of the leader's rational choice to maximize their own interests.

5.3 Policy Vagueness in Democracy and Autocracy

Democracy or autocracy, which tends to have more ambiguous policy? This question does not have an easy answer, as we can observe a significant amount of policy ambiguity in both types of regimes in the real world. Therefore, policy ambiguity itself is not a key characteristic distinguishing the two types of regimes. A more important question might be whether the social welfare effects of ambiguous policies differ between different types of regimes.

The framework proposed in this paper provides a unified explanation for the emergence of policy ambiguity or clarity in different types of regimes (measured by the combination of increasing ex-ante congruency and decreasing reputation concern β from relatively authoritarian to relatively democratic).

In our framework, the ideal democratic regime (large α and small β) has strong incentives to choose ambiguous policies to discover the most popular policies in the face of policy uncertainty. Therefore, in a well-functioning democratic regime, pre-policy ambiguity is intended to select the most popular policies post-implementation, maximizing social welfare. In this case, policy ambiguity is beneficial to society.

Conversely, in more authoritarian regimes (small α and large β), the motivation for choosing ambiguous policies is to allow authoritarian rulers to maximize their rent-seeking goals post-implementation. In this scenario, policy ambiguity can be harmful to society. As Shum (2021) extends the criticism of the Hong Kong National Security Law to a general critique of Chinese law: "Ultimately, the Party imposed a national security law on Hong Kong that has basically nullified the right of free speech. Like all laws born in mainland China, it was purposely vague, full of gray areas, that gave the Party wide latitude to prosecute anyone it disliked."

5.4 Flexible Democracy and Rigid Autocracy

Democracy or autocracy, which is more flexible and adaptive to new environment? This question is not obvious. Some argue that democratic decision-making requires lengthy procedures, while authoritarian systems can react quickly. Others believe that democracies can adjust policies based on public opinion in a timely manner (Feng, 1997), whereas authoritarian regimes are more prone to policy rigidity, difficulties in correcting mistakes, and even one-size-fits-all solutions .

Our theory supports the latter view to some extent. If we interpret the regime with high degree of ex-ante congruency (large α) as more democratic and the regime with low degree of ex-ante congruency (small α) as more authoritarian, we point out that: As policies are implemented and public feedback starts to appear, democracies, compared to authoritarian regimes, are more likely to remain flexible and adjust policies in line with public opinion, all other conditions being similar.

Cross-national comparisons of COVID-19 prevention and control processes also support our observation. Although all countries implemented lockdown measures for some time at the beginning of the pandemic, democracies were able to gradually relax lockdown policies and transition to various flexible and precise prevention measures, based on the impact of these policies on the economy and people's lives, as well as changes in the virus's virulence. In contrast, from the Wuhan lockdown in 2020 to the Shanghai lockdown in 2022, China adhered to a lockdown-centric prevention policy for an extended period, demonstrating less flexibility.

5.5 Dual Roles of Policy Vagueness

The ambiguity in the communication process between leaders and subordinates and its welfare consequences is also a non-obvious issue. On one hand, the ambiguity of leadership directives creates more discretionary space for subordinates, which is conducive to organizational trial and error and enhances organizational adaptability. On the other hand, the ambiguity of leadership directives also provides leaders with more flexible post-hoc operational space.

A very typical case is the "Fool's Melon Seeds" incident in China during the 1980s. In the early 1980s, the central government of China encouraged local areas to adapt to local conditions and develop their economies. Entrepreneur Nian Guangjiu started a business that employed more than 100 workers. However, this scale of employment exceeded the labor policy limits of China at that time (according to the regulations at the time, any enterprise employing more than eight people was considered a capitalist enterprise, which was a sensitive ideological issue in China then). As a result, Nian was reported to the central government, and his business was discussed at the highest levels of the Chinese government. Chinese leader Deng Xiaoping opined that Nian's individual business activities did not pose a threat to the public ownership economy. Deng took a "wait and see" approach, allowing the business to develop for the time being; as a result, Nian was not penalized. Through the enlightened handling of the "Fool's Melon Seeds" incident, the central government gained more reform credibility.

6 Conclusion

It is a common phenomenon that a leader in an organization chooses to express his idea either clearly or ambiguously. This paper develops a simple model that offers a new and subtle perspective to understand this phenomena: Given the leader's reputation concerns, his choice to express ideas clearly or ambiguously ex-ante can serve as a commitment mechanism for ex-post flexibility. If a leader chooses to express idea vaguely ex-ante, he faces a strong reputation constraint, leading to greater ex-post flexibility. Conversely, if

a leader opts for a clear ex-ante expression, he faces a weaker reputation constraint, resulting in less ex-post flexibility. As the weight of reputation compared to the rent in the leader's concerns changes, the leader strategically chooses either vague or clarified disclosure rule in initial stage.

Our theory can be used to explain many stylized phenomena in the real world: Why does one-size-fits-all policy implementation occur more frequently in autocratic countries? Although policy ambiguity is prevalent in both democratic and authoritarian countries, is there a difference in the resulting social welfare outcomes? When does policy ambiguity serve the purpose of policy experimentation and exploration, and when does it play the role of blame-shifting? Our theory contributes an unified framework to these questions.

In our theory, the policy chosen by the organizational leader is always short-term policy for his own tenure. Therefore, whether leader chooses a clarified or vague strategy primarily affects his policy choices and social welfare during his office period. However, in a long-term dynamic environment, the choice of clarified or vague policy by the organizational leader may have intertemporal effects on the policy choices of his successors. This is also a common phenomenon in organizational sociology in the real world. Thus, starting from our theory, continuing to explore the strategic ambiguity or clarity in the long-term policy choices of organizational leaders would be a very interesting future research agenda.

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