



An example of conflicts of interest as pandering disincentives



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HIGHLIGHTS

- An agent communicates the state of the world via cheap talk to a listener.
- Listener chooses a project–state dependent–or outside option–state independent.
- Conflicts of interest over projects and outside option countervail each other.
- An increase in conflicts of interest in one dimension improves communication.

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ABSTRACT

Consider an uninformed decision maker (DM) who communicates with a partially informed agent through cheap talk. DM can choose a project to implement or the outside option of no project. Unlike the current literature, we show that if there exists multiple dimensions of conflicts of interests between a single agent and a single receiver (DM), an increase in the conflict of interest in one dimension may actually improve cheap talk communication given that it acts as a countervailing force to conflicts of interest in other dimensions.

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1. Introduction

A key problem in organizations is that a decision maker (DM) must often rely on a privately informed agent, whose interests may differ from that of DM. Unlike the current literature, we consider the following setting: there is potentially two-dimensional conflict of interest between a single DM and a single agent. The first dimension of conflict, an agent's pandering incentive, is similar to the one considered by Che et al. (2013), hereafter CDK. The second dimension of conflict, conflict of interest over projects, is closer to the one in Crawford and Sobel (1982), hereafter CS. A single project will succeed and benefit both DM and the agent, and the other projects will fail. However, both players' ex-ante rankings of projects (based on common prior) may not coincide because their benefits from a

successful project may not coincide. The agent is only imperfectly informed about which project will succeed, and he recommends a project to DM using cheap talk. DM decides whether any project should be undertaken. We show that an increase in the conflict of interest in one dimension can improve cheap talk communication given that it acts as a countervailing force to conflict of interest in the other dimension.

Our model and CDK's appendix E.2 both involve two dimensions of conflict of interest. Our two dimensions of conflicts of interest—the interaction of conflicts of interest over the outside option and ex-ante preferred projects—act as countervailing forces against one another and makes information transmission non-monotonic with conflicts of interest while CDK's—"conflicts of interests over conditionally better looking" projects and the outside option—do not.

In CDK, a perfectly informed agent is willing to recommend a project against his bias so that his recommendation looks credible. In our model, when the information is noisy, an imperfectly informed agent is not willing to recommend a project against

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his bias. The smaller conflict of interest, the agent more easily persuades DM to accept his recommendation.²

2. Model

There is an uninformed DM and a partially informed agent. In addition, there are two projects—project 1 and 2. There are two states of nature $\theta \in \{1, 2\}$, which are equally likely. DM decides whether to carry out a project, $P \in \{1, 2\}$, or no project (the outside option), $P = \emptyset$. A project which is carried out will succeed and deliver predetermined benefit to both players if $P = \theta$; else, it will fail and deliver zero benefit to both players.

Both players are risk-neutral, and both seek to maximize profits. When project 1 (project 2) is carried out and succeeds, every player obtains benefit 1 (DM and the agent obtain benefit $x \in (0, 1)$ and $t \in (0, \infty)$, respectively). Neither player obtains any benefit otherwise. Their ex-ante rankings over projects coincide if $t < 1$ and do not coincide otherwise.³

Carrying out a project entails a non-transferable cost c to DM. c is uncertain ex-ante. Before making a decision, DM privately learns c , which is drawn from a uniform distribution with support $[0, 1] \subset \mathbb{R}$.⁴

In summary, DM's payoff is given by:

$$U^{DM}(P, \theta, c) = \begin{cases} 1 - c & \text{if } P = \theta = 1 \\ x - c & \text{if } P = \theta = 2 \\ -c & \text{if } P \in \{1, 2\} \text{ and } P \neq \theta \\ 0 & \text{otherwise.} \end{cases} \quad (1)$$

Agent's payoff is given by:

$$U^{agent}(P, \theta) = \begin{cases} 1 & \text{if } P = \theta = 1 \\ t & \text{if } P = \theta = 2 \\ 0 & \text{otherwise.} \end{cases} \quad (2)$$

Both players' payoff functions, parameters x and t , and the distribution of c are common knowledge.

The agent privately observes a binary signal $\sigma \in \{1, 2\}$ such that $\sigma = \theta$ with probability $\alpha \in (\frac{1}{2}, 1)$, and $\sigma \neq \theta$ otherwise. Signal precision α is common knowledge. σ is not observed by DM; it is soft and unverifiable information. After observing σ , the agent sends a message $m \in \{1, 2\}$, and DM observes m without noise.⁵ Communication is costless for both players.

The timeline is as follows.

1. Nature chooses the state $\theta \in \{1, 2\}$.
2. The agent privately observes a signal $\sigma \in \{1, 2\}$.
3. The agent sends a cheap talk message $m \in \{1, 2\}$ to DM.
4. DM privately learns the cost $c \in [0, 1]$.
5. DM decides whether to carry out a project, $P \in \{1, 2\}$, or no project, $P = \emptyset$.
6. The payoffs are realized for both players. The game ends.

We study perfect Bayesian equilibria. Let $\beta^*(\sigma)$ denote the probability that the agent sends $m = \sigma$ given σ . Let

$$\mu^*(m) := \Pr(\theta = m | m, \beta^*), \quad (3)$$

² In CDK, "it (conflict of interest) counteracts the agent's preference bias" (CDK's online appendix, page 28) means that DM's marginal benefit from introducing pandering is not monotonic with conflict of interest over projects. It does not mean that information transmission (and hence DM's absolute benefit) is non-monotonic with conflict of interest over projects.

³ DM ex-ante prefers project 1 to project 2.

⁴ In part E.3 of their online appendix, CDK also considered a stochastic outside option (DM has private information on it) and showed that pandering still exists.

⁵ If the message set includes at least two elements (the number of states), the result remains unchanged.

this is DM's posterior belief given m and β^* . Let $P^*(c, m)$ denote DM's strategy given m and c .

Without loss of generality, we assume:

$$\Pr(\theta = i | m = i, \beta^*) \geq \Pr(\theta = i | m = j, \beta^*) \quad (4)$$

for $i, j \in \{1, 2\}$ and $i \neq j$. This is equivalent to $\mu^*(m) \geq \frac{1}{2}$ for any m .

We also assume $\beta^*(1) = 1$ and $\beta^*(2) = 0$ (the agent always sends $m = 1$) in an equilibrium where there is no information transmission.

We define four types of equilibria.

Definition 1. In a truthful equilibrium (T), $\beta^*(\sigma) = 1$ for any σ and $P^*(c, m) \in \{m, \emptyset\}$ for any m . In a pandering-toward-1 equilibrium (P1), $\beta^*(1) = 1$, $\beta^*(2) \in (0, 1)$ and $P^*(c, m) \in \{m, \emptyset\}$ for any m . In a pandering-toward-2 equilibrium (P2), $\beta^*(1) \in (0, 1)$, $\beta^*(2) = 1$ and $P^*(c, m) \in \{m, \emptyset\}$. In a zero equilibrium (Z), $\beta^*(1) = 1$, $\beta^*(2) = 0$ and $P^*(c, m) \in \{1, \emptyset\}$ for any m .

In T, the agent sends $m = \sigma$, and DM carries out what the agent recommends if the benefit exceeds the cost. In P1 (P2), the difference from T is that the agent partially reveals $\sigma = 2$ ($\sigma = 1$) by mixing between two messages. In Z, the agent does not reveal any information, and DM never selects project 2. In this paper, we sometimes call T, P1 and/or P2 *informative equilibria*.

3. Pandering disincentives

3.1. Preliminaries

First we fully characterize equilibria for every set of parameters.

Proposition 1. Fix any x . Define:

$$A_1(t, x) := \left\{ \alpha \in \left(\frac{1}{2}, 1 \right) : \frac{t\alpha^2}{1-\alpha} = \frac{1}{2} \right\},$$

$$A_2(t, x) := \left\{ \alpha \in \left(\frac{1}{2}, 1 \right) : \frac{\alpha^2}{t\alpha(1-\alpha)} = \frac{1}{1+x} \right\}.$$

Then, for $t < 1$, T exists if:

$$\alpha \in \left[\frac{1}{1+xt}, 1 \right),$$

and P1 exists if:

$$\alpha \in \left(\max \left\{ A_1(t, x), \frac{1}{1+x} \right\}, \frac{1}{1+tx} \right).$$

For $t \geq 1$, T exists if:

$$\alpha \in \left[\max \left\{ \frac{1}{1+x}, \frac{tx}{1+tx} \right\}, 1 \right),$$

and P2 exists if:

$$\max \left\{ A_2(t, x), \frac{1}{1+x} \right\} < \frac{tx}{1+tx} \quad \text{and}$$

$$\alpha \in \left(\max \left\{ A_2(t, x), \frac{1}{1+x} \right\}, \frac{tx}{1+tx} \right).$$

Z exists for any t and α . No other equilibrium exists. Further, both players are better-off in the informative equilibrium (if it exists) than in Z.

Proof. See Appendix. ■

Fig. 1 shows Proposition 1.

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