Advocates

(Dewatripont Tirole, JPE 1999)

Nina YIN

05-05-2009

Motivation

- Are two advocates better than a single agent in information collection when principal makes decisions?

Example

- An organization want to invest a large amount of money.
- Potential choices: Project A, Project B, status quo (both, each in half).
- It can hire agents to investigate the information of profitability of both projects.
- If information shows:
  - A(or B) is profitable, then choose A(or B);
  - None (both) of them are profitable, then choose status quo.
- Should the organization hire a single agent or two conflicting agents?

Outline of this paper

- Basic Model
  - Monetary rewards
  - Career concerns
- Extensions
  - Concealment of information
  - Self-advocacy
  - Nonbenevolent decision makers
- Applications in law and political science
- Conclusions

Organizational Goals

- A decision maker must choose among three options : decision A, B or status quo ($\emptyset$)
- The choice is based on a parameter θ:
  - If $\theta = -1$, then the optimal desion is A;
  - If $\theta = 1$, B is optimal;
  - If $\theta = 0$, $\emptyset$ is optimal.
- $\theta = \theta_A + \theta_B$.
- $\theta_A(or\ \theta_B) = \begin{cases} -1(or\ 1) & \text{with probability } \alpha \\ 0 & \text{with probability } 1-\alpha \end{cases}$;
- Thus $\theta = \begin{cases} -1 & \text{with probability } \alpha(1-\alpha) \\ 0 & \text{with probability } 1-2\alpha(1-\alpha) \\ 1 & \text{with probability } \alpha(1-\alpha) \end{cases}$.

Information Collection I

- To obtain the information favorable to one of the causes $i (i = A, B)$, an agent must incur effort K.
  - If $\theta_i = 0$, he learns nothing;
  - If $|\theta_i| = 1$, he learns hard evidence P_i of the value θ_i with probability q; and learns nothing with probability $1 - q$.
- Let $x \equiv \alpha q$ denote unconditional probability of collecting information for one cause.
- As a first step, we assume that information is nonmanipulable, i.e.,the hard evidence cannot be concealed or forged.

Information Collection II

- Three types of errors when making decisions:
  - Inertia: when $|\theta| = 1$, status quo is chosen; L_I denotes the losses incurred by organization under inertia;
  - Extremism: when $\theta = 0$, one of the two causes is chosen; L_E denotes the losses under extremism;
  - Misguided Activism: when $\theta = -1$, cause B is chosen or when $\theta = 1$, cause A is chosen; L_M denotes losses.
- $\hat{\alpha}$: posterior beliefs that $|\theta_j| = 1$, conditional on no information favorable to cause j having been discovered.
- Assumption 1: If the information is $(\emptyset, P_B)$, then the optimal decision is to choose cause B.
  - i.e., $\hat{L}_I \equiv (1-\hat{\alpha})L_I - \hat{\alpha}L_E > 0$
- Assumption 2: If the information is $(\emptyset, \emptyset)$, then it is optimal to choose status quo.
  - i.e., $\hat{L}_E \equiv [1-2\hat{\alpha}(1-\hat{\alpha})]L_E + \hat{\alpha}(1-\hat{\alpha})L_M - 2\hat{\alpha}(1-\hat{\alpha})L_I > 0$.

Agents' Preferences

- Representative advocacy v.s. self-advocacy.
- Rewards are in the form of monetary compensation and career concerns.
- Agents are risk neutral, with limited liability and zero reservation utility.
- Decision-based rewards: $\{\omega_A, \omega_B, \omega_0\}$ rather than information-based rewards $\{\omega_A, \omega_B, \omega_2, \omega_0\}$
  - Decision rather than information is easily observed.
  - In the case of trial, the quality of the legal case is hard to mearsure.
  - If decision maker can administer the rewards, then if he is the principal, he has incentive to deny receiving the information, or if on behalf of the principal, he might has an pro(anti)-agent bias and arbitrarily choose rewards ω_2 or ω_0.

Single Agent(Nonpartisanship) I

- Let $\omega_A, \omega_B$and ω_0 denote wages when the decision $(A, B$or $\emptyset)$ is made respectively.
- The net utility of the agent are:
  - If no effort exerting, $U_0 = \omega_0$;
  - If investigating cause i, $U_1 = x\omega_i + (1-x)\omega_0 - K$;
  - If investigating both causes, $U_2 = x(1-x)(\omega_A + \omega_B) + [1 - 2x(1-x)]\omega_0 - 2K$.
- It's optimal to set symmetric rewards $\omega_A = \omega_B = \omega$.

Single Agent(Nonpartisanship) II

- The incentive compatibility scheme to let agent investigate both causes must satisfies: $U_2 \geq U_1$, and $U_2 \geq U_0$, which implies:
  - $x(1-2x)(\omega - \omega_0) \geq K$
  - $x(1-x)(\omega - \omega_0) \geq K$
- Thus, if $x \geq 1/2$, no wage structure that induces full investigation.
- If $x < 1/2$, the optimal wage structure to induce full investigation is: $\omega_0 = 0$ and $\omega = \frac{K}{x(1-2x)}$.
- The agent enjoys rent $U = 2x(1-x)\omega - 2K$.

Two Agents (Advocacy) I

- Suppose now two agents are hired, and each one is in charge of one cause.
- The optimal incentive scheme is to pay agent i, in charge of cause i, $\omega_0 = \omega_j = 0$,and $\omega_i = K/x(1-x)$.
- The rent of the agent is:
  - $\omega_0 = 0$ if shirking;
  - $x(1-x)\omega_i - K = 0$ if exerting effort.

Two Agents (Advocacy) II

- Proposition 1: Having two advocates strictly dominates having a single one:
  - $(a)(i)$ If $x \geq 1/2$, there is no possibility of full information collection by a single agent. (ii) If $x < 1/2$, a single agent system abandons rent $2xK/(1-2x)$ to the agent.
  - (b) By contrast, for any x, advocacy induces full information collection without leaving any rents.

Robustness to Career Concerns I

- Two periods; only career concerns matter;
- Labor market updates its beliefs of agents' ability based on decision $d(d \in \{A, B, \emptyset\})$ chosen in the 1st period; and then decides to employ agents in the 2nd period.
- 1st Period: wage$= 0$; 2nd Period: expected surplus is $\omega(d)$;

Incentive constraints for single agent:

- $E[x(1-2x)]\delta(\omega - \omega_0) \geq K$, and
  $E[x(1-x)]\delta(\omega - \omega_0) \geq K$, where $\omega = \omega(A) = \omega(B)$,$\omega_0 = \omega(\emptyset)$.
- when $E[x(1-2x)] \geq 0$, full information collection is feasible iff $\delta \geq K/E[x(1-2x)](\omega - \omega_0)$.

- δ: discount factor, career concerns.
- $x \equiv \alpha q$ is random with PDF $f(x)$. The ability: q, prob. of unveiling information is random, unknown to all players.

Robustness to Career Concerns II

Incentive constraints for two agents:

- $E[x]\{E[x]\delta(\hat{\omega}_0 - \hat{v}) + [1 - E[x]]\delta(\hat{\omega} - \hat{\omega}_0)\} \geq K$, and $\hat{\omega} > \hat{\omega}_0 > \hat{v}$.
- where $\hat{\omega}$ is expected surplus when favorable cause is chosen; $\hat{\omega}_0$ when status quo is chosen; and $\hat{v}$ when opposite cause is chosen.

Proposition 1': Under career concerns,

- (a) Full information collection by a single agent is infeasible if $E[x(1-2x)] \leq 0$, but it's feasible under advocates if career concerns are strong.
- (b) If $E[x(1-2x)] \geq 0$ and career concerns are strong, full information collection is feasible in both systems. The nonpartisan system dominates the advocacy system in that it yields a lower risk of extremism and the same risk of inertia.

Concealment of Information I

- Assume that agents might find countrary evidence, and can hide it.
- After exerting effort K, agent i might learns:
  - $$\begin{cases} \emptyset_i & \text{with probability } 1-z \\ \mathsf{P}_i & \text{with probability } z\beta \\ (\mathsf{P}_i, N_i) \equiv \tilde{\emptyset}_i & \text{with probability } z(1-\beta) \end{cases}.$$
- Concealment implies
  - Single agent: $(P_i, N_i) \overset{reports}{\rightarrow} \mathsf{P}_i, or N_i$;
  - Two advocates: $(P_i, N_i) \overset{reports}{\rightarrow} \mathsf{P}_i$;
  - Two prosecutors: $(P_i, N_i) \overset{reports}{\rightarrow} \mathsf{N}_i$;

Concealment of Information II

- Proposition 2: Under information concealment,
  - (a) Nonpartisanship: errors: extremism;
  - (b) Advocates: defend a cause and conceal contrary evidence, errors: inertia and extremism;
  - (c) Prosecutors: look for evidence contrary to a cause and conceal favorable evidence, errors: inertia and extremism;
  - (d) Status quo more prevail under advocates and prosecutors than under nonpartisanship.
- Proposition 3: The optimal system is
  - (a) Nonpartisanship, if L_I large enough relative to L_E and K;
  - (b) Bilateral advocacy, if $\beta \to 1$;
  - (c) Bilateral prosecution, if $z \to 1$.

Self-advocacy v.s. Representative advocacy I

- Benefits of Self-advocacy: powerful incentive to agents, no agency cost.
- Disadvantage: strong incentives to misbehave, overstate, forge information; lose credibility.
- Proposition 5: Ignore any agency cost of delegation, then
  - (a) when forging does not alter reliability of information$(\beta\hat{L}_I > (1-\beta)\hat{L}_E)$, the principal want to impose delegated advocacy;
  - (b) when forging alters reliability of information$(\beta\hat{L}_I < (1-\beta)\hat{L}_E)$, both the principal and the constituency are better off under delegated advocacy.

Self-advocacy v.s. Representative advocacy II

Proof.

- Information collected about cause A are:
$$\begin{cases} \emptyset & \text{with probability } 1-z \\ \mathrm{P}_A & \text{with probability } z\beta \\ (\mathrm{P}_A, N_A) \equiv \tilde{\emptyset}_A & \text{with probability } z(1-\beta) \end{cases}.$$
- Let f, cost of forging information to transform $\tilde{\emptyset}_A$ to P_A. G, constituency A's gain from choosing A rather than $\emptyset$.
- (a): If $\beta\hat{L}_I > (1-\beta)\hat{L}_E$, principal chooses A when receiving P_A. No cost of self-advocacy to the constituency. But Principal incurs loss from constituency's forging information. Principal is better off to require constituency hire an advocate with $\{\omega_A, \omega_0 = 0\}(\omega_A < f)$ and avoid forging.

Self-advocacy v.s. Representative advocacy III

Proof.

Continued:

- (b): If $\beta\hat{L}_I < (1-\beta)\hat{L}_E$, principal chooses status quo when receiving P_A. Mixed strategies eq. : Self-advocate forges with prob.γ when $\tilde{\emptyset}_A$; Principal chooses A with prob. v when receiving P_A. Thus self-advocate's payoff is $z\beta vG$
- If the constituency hires a representative advocacy and pays $\omega_A = K/z\beta < f$, thus his expected payoff is

$$z\beta(G-\omega_A) = z\beta G - K > z\beta vG - K.$$

Thus principal and constituency are all better off under representative advocacy.

□

Integrety of Decision Making: Advocacy Generates Endogenous Appeals

- Because of capture, political agendas, incompetency, decision making may not be performed properly.
- Appeals are efficient to keep biased decision makers on their toes.
- Endogeous appeals (by parties) are less costly than exogenous appeals.
- Advocacy is an effcient way to generating endogenous appeals.
- Proposition 6: Any bias in the decision maker's choice is appealed in an advocacy system, provided that the advocate for cause i faces rewards $\omega_i > \omega_0 > \omega_j$. By contrast, a biased choice in favor of one cause is not appealed in nonpartisan system.

Applications

- Comparative Legal System
  - Common-law system (partisanship)
  - Civil-law system (nonpartisanship)
- The Role of Congressional Committees
  - Distributive approach
  - Informational approach
- Energy Regulation
  Conflicting tasks are split to different agents:
  - To educate consumer to reduce electricity consumption
  - To supply a high quality of service

Future Research and Conclusions

- Future Research:
  - Separation of investigation and adjudication
  - Competition and cooperation among advocates
  - Combining partisanship and nonpartisanship
- Advocacy has two benefits:
  1. Advocates' rewards closely track their performance, while non-partisans' incentives are impaired by pursuing several causes at one time.
  2. Advocacy enhances the integrity of decision making by creating strong incentives to appeal.

Thank you!