Leadership, Coordination and Mission-Driven Management

Patrick Bolton, Markus Brunnermeier and Laura Veldkamp

Columbia, Princeton and NYU

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Three Challenges of Leadership

- Balancing coordination and adaptation.

  – Strong commitments achieve coordination but sacrifice adaptation to changing circumstances.

- Maintaining credibility.

  – New information creates a time-consistency problem, a temptation to commit to something and then renege.

- Listening and learning from followers.

  – The actions of perfectly coordinated followers do not reveal new information.

What are valuable attributes of a leader?

Outline

- Three ingredients of the model:

  – A leader balancing coordination, adaptation and time-consistency (credibility).

  – Give the leader a commitment technology (a reputation).

  – Leader learns from followers' actions.

- Main result: Resoluteness (believing your initial information is more precise than it truly is) is a valuable attribute of a leader. Everyone knows that resolute leaders will "stick to their guns." This credibility allows them to better coordinate their followers.

Relationship to the Literature

- Goel & Thakor (2008) - A tournament model of leader selection. Overconfident agents win tournaments.

- Rotemberg & Saloner (1993, 2000), Hermalin (1998) - How to motivate followers to exert effort. No role for coordination.

- Van Den Steen (2005) - A leader with strong beliefs attracts people with similar beliefs $\rightarrow$ coordination and more worker effort.

- Dessein & Santos (2006) - What institutional structure best facilitates communication and coordination?

- Kaplan, Klebanov & Sorensen (2007) - Reputation measures like "follows through" and "persistent" predict performance.

The Simple Model: Payoffs

A continuum of followers values three things:

1. **Alignment**: taking an action a_i that is close to (or consistent with) the organization's strategy a_L,

2. **Coordination**: belonging to a well-coordinated organization,

3. **Adaptation**: belonging to an organization whose strategy is well-adapted to its environment θ.

$$\Pi_i = -(a_i - a_L)^2 - \int_j (a_j - \bar{a})^2 dj - (a_L - \theta)^2$$

Leaders have the same preferences, except that $(a_i - a_L) = 0$, because $i = L$. The organization's payoff is $\Pi := \int_i \Pi_i$.

Model Timing

1. Leader has a prior belief: $\theta_L \sim N(\theta, 1)$.
   Leader believes: $\theta_L \sim N(\theta, \sigma_p^2)$, $\sigma_p^2 < 1$ (resoluteness).
   Follower i believes: $\theta_i \sim i.i.d. \, N(\theta, \sigma_\theta^2)$

2. Leader announces the organization's strategy: discloses θ_L (credibly).

3. Followers update with Bayes' law and choose actions a_i.

4. Leader then observes a signal about the state: $S_L \sim N(\theta, \sigma_2^2)$, rational beliefs (later, S_L is from others' actions).

5. Leader chooses the ultimate direction for the organization a_L.

6. Payoffs are realized.

Optimal Actions

- Leader chooses

$$a_L = E[\theta|\theta_L, S_L] = \lambda\theta_L + (1 - \lambda)S_L$$

where $\lambda := \sigma_p^{-2}/(\sigma_p^{-2} + \sigma_2^{-2})$.

- Follower i chooses

$$a_i = E[a_L|\theta_i, \theta_L] = \lambda\theta_L + (1 - \lambda)\left[\phi\theta_L + (1 - \phi)\theta_i\right]$$

where $\phi := 1/1 + \sigma_\theta^{-2}$.

Result: Optimal Resoluteness

Result: *Resoluteness is optimal. The σ_p^2 that maximizes firm utility is always < 1.*

- The announcements of resolute leaders are more credible.
  - A leader wants followers to believe that his final action will be the one he first announces: $a_L = \theta_L$. This achieves perfect coordination.
  - After the followers act, the leader gets new information and wants to adapt his action. He reneges on his commitment.
  - Resolute leaders discount new information. They choose a_L closer to θ_L.

- Resoluteness improves alignment $-(a_i - a_L)^2$, improves coordination $-(a_i - a_j)^2$, but inhibits adaptation $-(a_L - \theta)^2$.

Introducing a Commitment Technology

- Resoluteness acts like a commitment device that keeps a leader from changing his mind too much. If a leader has a traditional commitment technology, does this eliminate the need for resoluteness?

- A leader "can stake the firm's reputation" on staying with his original course of action. Choose c at stage 1.

$$\Pi_i = -(a_i - a_L)^2 - \int_j (a_j - \bar{a})^2 dj - (a_L - \theta)^2 - c(a_L - \theta_L)^2$$

Commitment Costs and Resoluteness

Result: *Even with a commitment device, it is still optimal to choose a resolute leader. However, the level of resoluteness is lower than when $c = 0$.*

2 reasons:

1. Resolute leaders put more on the line. If firms value coordination more than leaders, firms should choose resolute leaders.

   - Only the firm bears the misalignment cost $(a_L - a_i)^2$.

2. Resolute leaders incur less commitment cost. (They change their minds less.)

Learning from Followers

- No commitment technology.

- Second signal comes from firm output A:

$$A = \int_j a_j \, dj + e \qquad e \sim \mathcal{N}(0, \sigma_e^2).$$

- If followers actions are linear in their signals,

$$a_i(\theta_i) = (1 - \beta)\theta_L + \beta\theta_i$$

then the second period signal is $A = (1 - \beta)\theta_L + \beta\theta + e$. The precision of A depends on β.

Optimal Actions with Learning

- Leader's optimal action is

$$a_L = E[\theta|\theta_L, \hat{S}_2] = \lambda\theta_L + (1-\lambda)\hat{S}_L.$$

where

$$\lambda = \frac{\sigma_p^{-2}}{\sigma_p^{-2} + \beta^2\sigma_e^{-2}}$$

- Followers' optimal action is

$$a_i = E[a_L|\theta_L, \theta_i] = \lambda\theta_L + (1-\lambda)(\phi\theta_L + (1-\phi)\theta_i).$$

Matching coefficients $\rightarrow \beta = (1-\lambda)(1-\phi)$.

Where Do Multiple Equilibria Come From?

- Mathematically: Substituting β into λ delivers an equation that is a third-order polynomial $\rightarrow$ 1 or 3 solutions.

- Conceptually: If followers choose action θ_L, then the leader will learn nothing new from their actions. With only one signal to base his action on, leader chooses $a_L = \theta_L$.
  If followers believe that the leader will see an informative second signal, they use their private information to forecast it. When private information affects actions, A is informative.

Followers' beliefs are self-confirming.

Equilibria with Learning from Followers

Two stable (linear) equilibria:

1. **"Dictatorial equilibrium"** achieves perfect coordination $a_i = a^L = \theta_L$, but no information flow.

   - In the dictatorial equilibrium resoluteness is irrelevant.

2. **"Lead by being led"** worsens coordination and alignment, but improves adaptation because leader gets more information.

   - Resoluteness is optimal iff output reveals most information or followers have little private information

$$\beta^{-2}\sigma_e^2 < \phi(2 - \phi)$$

Resolute Managers are Bad Listeners

- Dictatorial equilibrium always exists.

- The lead by being led equilibrium equilibrium only exists when resoluteness is not too high – It exists if

$$(1 - \phi)^2 > 4\sigma_e^2 \sigma_p^{-2}.$$

A resolute leader's perceived information can crowd out followers' information. (A bad listener)

Resoluteness vs. Competence

- Generalize the model: $var(\theta_L|\theta) \neq 1$. Call $var(\theta_L|\theta)^{-1}$ *competence.*

- Result: Resoluteness can be better than competence.

- Greater competence raises the weight that followers put on the first signal $((1 - \phi)$ falls) and raises the leader's perception of his signal quality (σ_p^{-2}). Both make the lead by being led equilibrium harder to sustain.

- Higher resoluteness only raises σ_p^{-2}.

- Resoluteness balances the need for commitment and the ability to solicit information from others who know that the leader's beliefs are distored.

Conclusions

- Resoluteness facilitates coordination.

- Resoluteness enhances credibility.

- Commitment costs/reputation are an imperfect substitute.

- Choosing resolute managers allows firms to reconcile differences between theirs and the managers' incentives. Firms can get resolute managers to take more risk.

- A warning: Resolute managers can suppress information transmission. But so can competent managers.