How Cheap is Talk?

Understanding motivations & strategic communication
Agenda

1. Beer & Poker Revisited

2. Persuasion through talk: an application to Drug Development

3. Reputation for Integrity
Poker: Takeaways

1. **Costly** signals can be used more credibly

2. **Partial** signaling in *zero-sum games*

3. Uninformed player relies on both **strategic** and **prior information**

4. Ability to signal **may still help** informed party

5. Signal is somewhat **credible**
The Decision-Making Process

Going from a new molecule to a drug is:
1. Incredibly costly
2. Risky for reputation (clinical trials)

Procedure:
• Stage-gates
• Go/No-Go decisions (often a gray area)

Betting the company on a single product
• Phase-3 meeting involves the Board
• Severe consequences of mistakes
• E.g. NEJM editor, my computer
The CEO’s pay-off

Governance decision

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<th>VS</th>
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<td>Go</td>
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<tr>
<td>No-go</td>
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0 < VS = value of success for the company

0 > VF = value of failure for the company

Success    Failure

Final outcome
The Incentives Problem

- Project manager has **better information** about projects
- Project manager can say **Weak** or **Strong** project
- PM can spin the evidence either way
- Should the CEO **listen** to the project manager?
- What are the PM’s **motivations**?
## Project Manager’s pay-off

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**Governance decision**

**B = career benefit for project manager**

**VS = value of success for the company**

**VF = value of failure for the company**

**Final outcome**
Private Information

• PM has information about the probability of success
  – Strong project: \( \text{Prob} [\text{Success}] = p_H \)
  – Weak project: \( \text{Prob} [\text{Success}] = p_L < p_H \)

• CEO’s expected payoff
  – NPV of No-Go = 0
  – NPV of Go (STRONG) = \( p_H \cdot \text{VS} + (1-p_H) \cdot \text{VF} > 0 \)
  – NPV of Go (WEAK) = \( p_L \cdot \text{VS} + (1-p_L) \cdot \text{VF} < 0 \)

• Manager’s expected payoff
  – NPV of No-Go = 0
  – NPV of Go (project \( p \)) = \( p \cdot \text{VS} + (1-p) \cdot \text{VF} + p \cdot B \)
One-Shot Cheap-Talk

- When interests are sufficiently aligned: credible talk
- This occurs if project manager’s NPV (Go, Weak) < 0
- PM says “No-Go” when project is Weak
- Otherwise, talk is ignored: NO STRATEGIC INFORMATION
- CEO acts under PRIOR INFORMATION only
  - “I know you are exaggerating, but I will go ahead anyway.”
  - “You may be telling the truth, but I can’t proceed anyway.”
- What if they play this game every month?
Lies and Quotas

• Over the long run, how often can the PM get the CEO to choose Go?

• Example: suppose 30% of the projects are Strong.

• The CEO chooses Go if she is >50% confident the project is, in fact, Strong.

• Suppose B is huge, so PM always wants “GO”

• How often can the PM lie?
“Persuasion” Exercise

• Suppose feedback re: decisions is very noisy

• The PM’s objective is to maximize the frequency with which the CEO chooses Go

• The CEO must be willing to listen
• Anytime PM says “Go,” probability (Strong) >50%

• The idea is to pool peaches and lemons
  – Peach = strong project
  – Lemon = weak project
“Persuasion” Exercise

• Let $x = \text{Prob}[\text{PM says “Go” } | \text{ project is Weak}]$.
• PM never says No-Go when project is Strong.
• The CEO requires $\Pr(\text{Strong} | \text{ Go}) = 50\%$
• Bayes’ rule $\Rightarrow (30\%)/(30\%+x*70\%) = 50\%$
• The PM can lie 43\% of the time when Weak project.
• The CEO chooses “Go” 60\% of the time!
• Half the time (30\%) correctly, half (30\%) incorrectly.
  • may explain excess R&D?
Does the PM have a reputation for credibility?

How does (s)he acquire it?

Can she lose it?
“Reputation is an idle and most false imposition; oft got without merit, and lost without deserving.”

Shakespeare, *Othello*
Reputation for Integrity

• Trust game
• One long-lived, many short-lived players
• The long-lived player is “normal” or “altruistic”
• Altruistic type always honors
• Infinite repetition... OK.
• Finitely repeated game: how do you think the equilibrium looks like?

CEO

Not

Trust

PM

Honor

Betray

(A,B) (C,A) (B,C)

IF ALTRUISTIC

(C,F)
Interpretation

• Cheap talk vs. hard evidence
  – CEO funds the project, then it fails
  – Toyota promises contract, then very few orders
  – Was demand low? Was the project promising?

• Random outcomes
  – Restaurant owner puts in good effort
  – Dinner experience ruined by “bad wine”

• Noisy Observations
  – Restaurant quality may be, in fact, high
  – A few customers in a bad mood write bad review
Noisy Observations

• If “honor,” the outcome (for the supplier) is “A” w/pr. 50% and “C” w/pr. 50%
• If “betray,” outcome is “C” for sure.
• Assume \((A+C)/2 > B\)

Let’s play!!

• Can long-run player establish a reputation for integrity?
• “Imperfect monitoring \(\Rightarrow\) impermanent reputations”
• “Bad luck” excuses \(\Rightarrow\) reputation is more fragile
"Noisy" Trust Game

- Crazy type always Honors
- Probability [Crazy] = 1/3
“Reputation Quotas”

• Can the normal type establish (and exploit) a reputation for integrity?

• Use “quota” strategy (50:50 on average...)

• Many “A”s ➞ some flexibility to exploit

• Students must punish long stretches of “C”s

• GE-W reminiscences? Normal type will eventually lose his reputation!
Takeaways

• **Repeated interaction** helps **reputation-building** in the usual way (future >> present), but:
  – **need opportunities** to prove yourself
  – **may need to micro-manage the game** (Toyota)

• **Noise or ambiguity** ➔ reputation is temporary (cycles), or no reputation-building at all

• **Expertise:** much harder to establish! (herding, or bad separating equilibrium)
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