

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	Go	VS	VF
	No-go	0	0

Success

Failure

Final outcome

**$0 < VS$ = value of success
for the company**

**$0 > VF$ = value of failure
for the company**

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

Governance decision	Go	$B + VS$	VF
	No-go	0	0

Success

Failure

Final outcome

misaligned { **B = career benefit for project manager**

aligned { **VS = value of success for the company**
VF = value of failure for the company

Private Information

- PM has information about the *probability of success*
 - Strong project: Prob [Success] = p_H
 - Weak project: Prob [Success] = $p_L < p_H$
- **CEO's expected payoff**
 - NPV of No-Go = 0
 - NPV of Go (STRONG) = $p_H * VS + (1 - p_H) * VF > 0$
 - NPV of Go (WEAK) = $p_L * VS + (1 - p_L) * VF < 0$
- **Manager's expected payoff**
 - NPV of No-Go = 0
 - NPV of Go (project p) = $p * VS + (1 - p) * VF + p * B$

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 $x = \text{Prob}[\text{PM says “Go”} \mid \text{project is Weak}]$.
- PM never says No-Go when project is Strong
- The CEO requires $\text{Pr}(\text{Strong} \mid \text{Go}) = 50\%$
- 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?

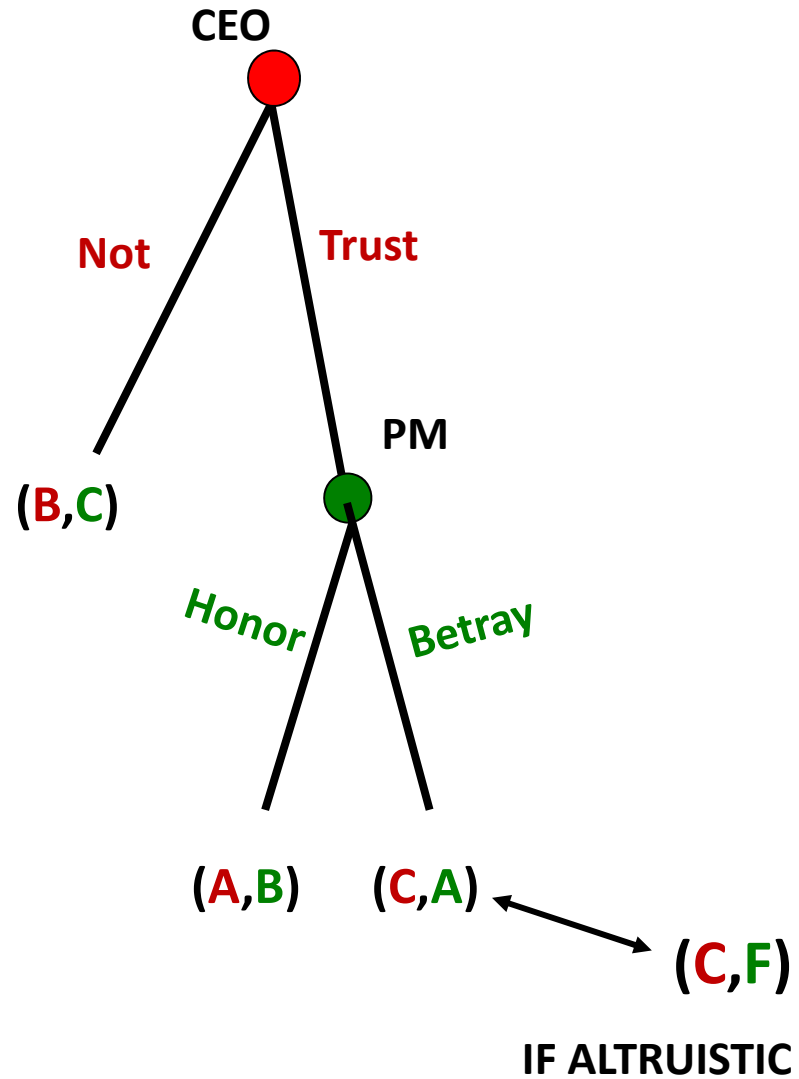
Can she lose it?

**“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?



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

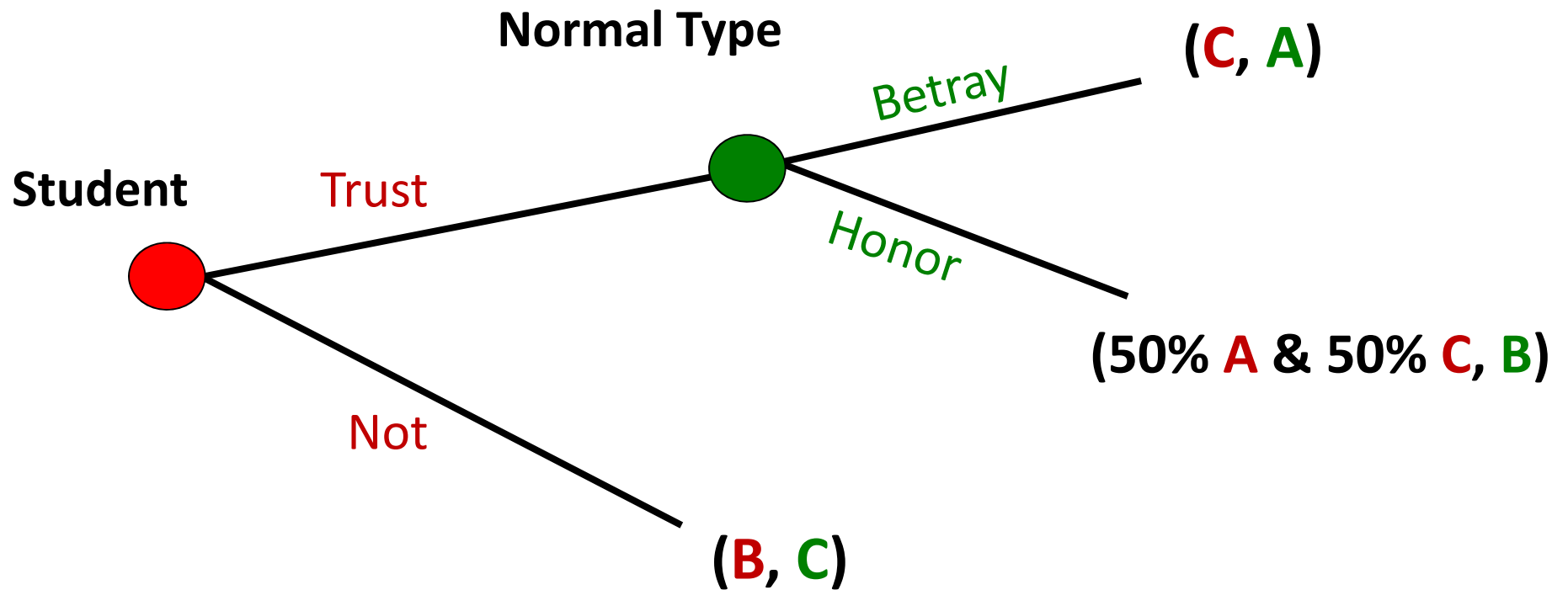
Noisy Observations

- 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 → impermanent reputations”
- “Bad luck” excuses → 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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