Disinformation and Misinformation: Organizational Self-Assessment in the Military

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Objectives

When can militaries evaluate themselves effectively?

- When can commanders identify incompetent subordinates?
- How do combat outcomes influence the ability of commanders to identify incompetent subordinates?
- How does the level of professionalism and the structure of the military influence this ability?

Introduction

The ability to identify and replace incompetent subordinates is crucial for military effectiveness. Yet, this problem is largely ignored by the extant literature. This paper develops a formal model that examines two players, a commander (H) and a subordinate (L), on opposite ends of a three-tiered hierarchy. The commander seeks to evaluate the competence of the middle player (M) based upon the aggregate battle outcome and a potentially-costly signal from the subordinate.

Setup

Figure 1: Sequence of Game

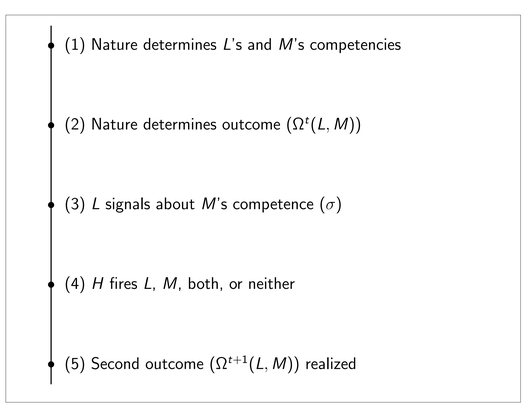


Table 1: Summary of Model Notation

Notation	(common knowledge)
$0 < p < 1$	Probability L or M is competent
$0 < \psi \leq 1$	L's rents-to-promotion
$0 < k$	Cost to signaling if M is retained
$0 < q < 1$	Probability mixed competencies yield high outcome
$0 \leq C \leq 1$	Cost H pays for firing a subordinate
$\Omega^t \in \{0, 1\}$	Battle outcome in time period t
$\sigma \in \{0, 1\}$	Indicates whether L signaled or not

Figure 2: Equilibrium Space ($\Omega^t = 0$)

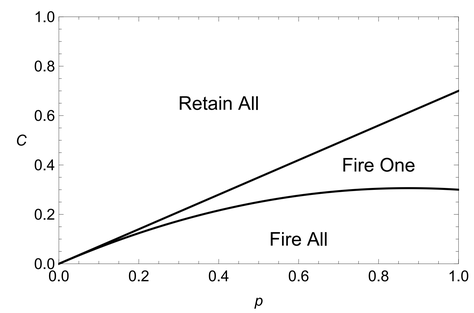
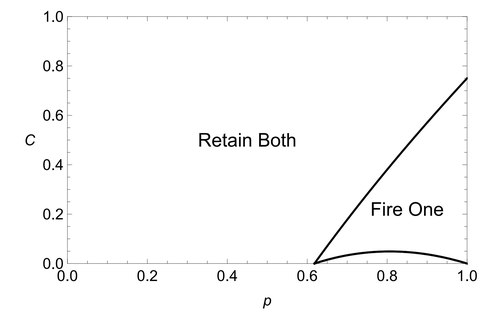


Figure 5: Pooling Equilibrium Space ($\Omega^t = 1$)



Key Implications

Commanders are only able to identify incompetent subordinates if (1) there is a good outcome and (2) the rents-to-promotion are sufficiently low. Commanders are never able to perfectly identify incompetent subordinates after a poor outcome and are likely to fire subordinates precisely when subordinates are more likely to be competent.

Figure 3: Payoffs

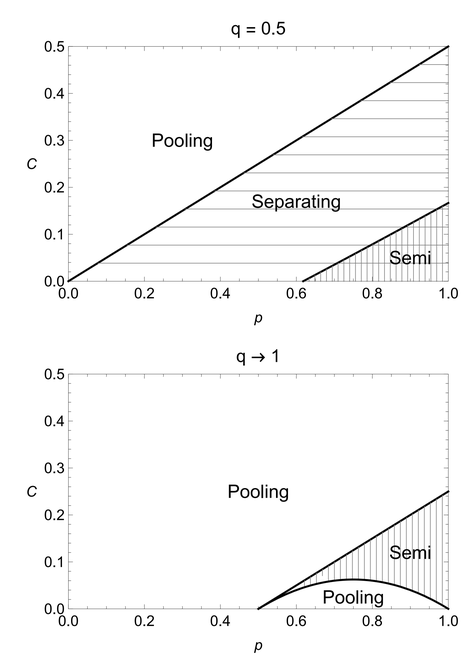
$$U_L = \begin{cases} 1 + \mathbb{1}(M) & \text{If } M \text{ not fired and } \sigma = 0 \\ 1 + \mathbb{1}(M) - k & \text{If } M \text{ not fired and } \sigma = 1 \\ 1 + \psi + p & \text{If } M \text{ is fired} \\ 0 & \text{If } L \text{ is fired} \end{cases}$$

$$U_H = \begin{cases} \Omega^{t+1}(L, M) & \text{If no one fired} \\ \Omega^{t+1}(L, M) - C & \text{If either } L \text{ or } M \text{ fired} \\ \Omega^{t+1}(L, M) - 2C & \text{If both } L \text{ and } M \text{ fired} \end{cases}$$

Results (Pure Strategy)

There exist three Pooling Equilibria after a poor outcome ($\Omega^t = 0$) in which H cannot identify incompetent subordinates. After a good outcome ($\Omega^t = 1$) there exist both a Separating ("Truth-telling") and a Semi-Separating ("Partially-Truthful") Equilibrium where H is able to at least partially identify incompetent subordinates. There also exist three Pooling Equilibria where she cannot.

Figure 4: Separating and Semi-Separating Space ($\Omega^t = 1$); Requires $\psi \leq 1 - p$



Conclusion

Subordinates will be willing to provide information only where they value M's competence at least as much as being promoted, and only after a good outcome. Otherwise, H will pool on firing behavior dependent upon the value of C relative to p and q. In general, where there is pooling there will be higher turnover as professionalism increases. Preliminary evidence from the US Army during and after World War II supports these results. Future work will connect these findings to larger questions in the conflict literature, such as military effectiveness, conflict duration, and conflict outcomes.

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