



Discretionary rewards as a feedback mechanism

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ABSTRACT

This paper studies the use of discretionary rewards in a finitely repeated principal-agent relationship with moral hazard. The key aspect is that rewards have informational content. When the principal obtains a private subjective signal about the agent's performance, she may pay discretionary bonuses to provide credible feedback to the agent. In accordance with the often observed compression of ratings, we show that in equilibrium the principal communicates the agent's interim performance imperfectly, i.e., she does not fully differentiate good and bad performance. Furthermore, we show that small rewards can have a large impact on the agent's effort, provided that the principal's stake in the project is small.

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1. Introduction

Incentive problems are part of most relationships. Much of the literature on incentive contracts is focused on how verifiable performance measures can be used to mitigate these problems. However, most people do not work in jobs where such measures are available for all important dimensions of performance (Prendergast, 1999). Instead, many firms extensively use discretionary rewards based on subjective, non-contractible performance measures.

In this paper, we study how the principal can use a subjective performance measure to motivate the agent. We show that, even in a finitely repeated game, the principal may have an incentive to give discretionary rewards despite their non-contractibility. This happens because she has private information about the agent's performance, and wants to communicate favorable information credibly to the agent to boost his motivation in future periods. The key factors that make the agent react to positive feedback are his initial uncertainty about his ability, and complementarity between ability and effort.

Since the principal is tempted to overstate the agent's performance, cheap talk would be ineffective in this situation.¹ A monetary reward ensures credibility and, in equilibrium, gives positive feedback about past performance. This result, establishing the informational content of a reward, is in line with the literature on motivation both in psychology and economics (see e.g., Deci and Ryan, 1985; Bénabou and Tirole, 2003). In equilibrium, the bonus is proportional to the principal's

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¹ One can check that only the babbling, uninformative equilibrium would be possible if costly signaling were replaced by a cheap talk game in our model. See also the discussion in Section 3.2.

payoff from the project's success. An interesting implication of this is that even a small bonus can have a substantial effect on the agent's subsequent motivation.

Our model furthermore predicts that good performance is not fully separated from bad performance by the principal. This result provides a new insight into the reluctance of managers to rate workers differently. The resulting compression of performance ratings is well documented in the literature (Prendergast, 1999). Another important result is that the prospect of getting a discretionary reward in case of success improves the agent's incentives to exert effort in the first place, even though the principal cannot *commit* to giving the reward. This improvement in incentives stems from the *information effect* (the agent gains from the opportunity to make a better decision concerning future efforts) and the *direct incentive effect* (the higher chance to get the reward at the interim stage if he works hard in the beginning).

The driving assumption behind all these results is that the principal has private information about the agent's performance. The widespread use of performance feedback systems shows the relevance of this assumption (cf. Gibbs, 1991). It seems especially relevant when workers are in their learning phase, produce a complex good, or contribute to a project that involves many individual tasks. The manager's experience enables her to form a better judgement of an employee's performance.

The model is closely related to those of Bénabou and Tirole (2003) and Suvorov (2003), which also focus on the informational content of rewards. In those papers, the principal's *promise* of a higher performance-contingent bonus sends a negative signal, whereas in our model a higher *discretionary* bonus gives positive feedback. The key difference stems from the assumption made in these papers: performance measures are supposed to be objective so that performance-contingent bonuses become contractible. If a principal observes that the agent has low ability, she also expects him to have low self-confidence. She, therefore, proposes a high reward in case of success to motivate the agent. In our case, in which the principal cannot commit to a contract, the returns to giving a high reward are higher after better interim performance.

The existing literature on subjective performance measures is mostly focussed on infinitely repeated games (e.g., MacLeod and Malcomson, 1989; Levin, 2003).² In that setup, non-contractible bonuses can be sustained in equilibrium through, for instance, the threat of termination of the relationship. Given that such reputation mechanisms are relatively well understood, we focus on a finitely repeated game. While our model can be extended to an infinite number of periods, we believe that a finite horizon is often realistic. This is certainly true for fixed-term contracts, but even under permanent contracts the principal and agent ultimately retire. Whenever there is some known end date, reputation mechanisms cease to be credible, and under standard assumptions, no self-enforcing discretionary bonus based on reputation can exist in equilibrium.³

Some other papers study subjective performance measures in finitely repeated games. MacLeod (2003) studies a one-shot game where there is no balanced budget between what the principal gives as a bonus and what the agent receives. The principal can promise to reward the agent after good performance, and to give the bonus away to a third party after bad performance (or "burn the money"). If she commits to spend the money in any event, she has no incentive to renege on giving it to the agent after good performance. Real life examples of such mechanisms do exist (see Fuchs, 2007), but it is unclear how important this practice is in reality. In this paper we focus instead on the balanced budget.

Lizzeri et al. (2003) and Fuchs (2007) also study the role of interim feedback about performance within a model with a finite horizon. In Lizzeri et al. (2003) the principal privately observes the agent's interim performance and his ability. Effort by a more able agent is more valuable to the principal, but does not increase the likelihood of success. The agent is interested in getting feedback because it allows him to adjust future efforts, given that his payoff depends on the entire history of performance and his ability (both of which are assumed to be ultimately verifiable). They show that the principal gains from revealing early the agent's ability, but not performance. One crucial difference with our approach, is that Lizzeri et al. (2003) assume that the principal can ex ante commit to information disclosure rules, so credibility is not an issue. Fuchs (2007) considers a repeated moral hazard problem without uncertainty about the agent's ability: his work is an extension of MacLeod (2003) to a dynamic environment. The principal is privately informed about the agent's performance. Since the agent's payoff depends on the entire history of payoffs, he is interested in receiving early feedback. However, Fuchs shows that the principal prefers to avoid giving informative interim feedback in order to exploit "reusability of punishments." Moreover, in the version of the model with a finite horizon, as in MacLeod (2003), there is no equilibrium with a positive reward unless one can break the balanced budget.

Finally, there is a complementary strand of literature that explains the use of discretionary bonuses with social preferences, which is distinct from our focus on the role of information. For instance, Fehr et al. (1997) argue that reciprocity can induce enforceability.

The paper is organized as follows. Section 2 presents the model and discusses the main assumptions. In Section 3 the equilibria are derived. In Section 4 we relax some of the assumptions and consider several extensions. Finally, Section 5 provides concluding remarks.

² See also Bull (1987), Baker et al. (1994), Pearce and Stacchetti (1998).

³ In the presence of irrational types or types with social preferences and incomplete information, reputation building can be part of the equilibrium (cf. Kreps et al., 1982).

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