



Are you a good employee or simply a good guy? Influence costs and contract design[☆]



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ABSTRACT

We develop a principal–agent model with a moral hazard problem in which the principal has access to a hard signal (the level of output) and a soft behavioral signal (the supervision signal) about the agent's level of effort. In our model, the agent can initiate influence activities and manipulate the behavioral signal. These activities are costly for the principal as they detract the agent from the productive task. We show that the agent's ability to manipulate the behavioral signal leads to low-powered incentives and increases the cost of implementing the efficient equilibrium as a result. Interestingly, the fact that manipulation activities entail productivity losses may lead to the design of influence-free contracts that deter manipulation and lead to high-powered incentives. This result implies that the optimal contract (and whether manipulation is tolerated in equilibrium or not) depends on the magnitude of the productivity-based influence costs. We show that it may be optimal for the principal not to supervise the agent, even if the cost of supervision is arbitrarily low.

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1. Introduction

Recent financial scandals including the Madoff's case of felony or the distortion of budget figures by the Greek Government, raise questions about the manipulability of information. In this article we study this issue in a principal–agent setup, in which the agent is given the possibility to influence the principal's evaluation of his work by manipulating certain pieces of information through the use of influence activities that distort the principal's evaluation of his performance if the principal engages in supervision.¹ Examples in that direction include an agent who invites his boss for a coffee or an agent who dresses or behaves in a particular way to make his supervisor feel he is more professional.

We assume that these activities have a cost for the agent and are aimed to manipulate the behavioral signal collected by the principal. This way of modeling influence is related to the work of [Mullainathan et al. \(2008\)](#) who consider the idea of associative thinking. In their framework, individuals classify situations into categories, and transfer the informational content

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¹ Hereafter, we use the feminine pronouns for the principal and masculine for the agent.

of a given signal from situations in a category where it is useful to those where it is not.² Applying this concept to our model, the principal who dedicates time to monitor the agent will find it difficult to distinguish the following positive pieces of information “*The agent is a hard-working (good) employee*” and “*The agent is a good person*”. These pieces of information belong to two different categories, work abilities and personality, and the difficulty for the principal is to disentangle signals that concern the contribution of their employee to the firm and the ones that relate to personal characteristics. Specifically, we model influence as a reduced form of coarse thinking by considering that the principal suffers from biased information processing à la [Bénabou and Tirole \(2002\)](#). As a result, the principal may misperceive a negative behavioral signal about the level of effort of the agent as being positive.

A comprehensive analysis of the manipulability of information requires a precise understanding of the relation between the concepts of hard and soft information. In the finance literature, hard information is defined as being quantitative ([Berger et al., 2005](#); [Stein, 2002](#); [Petersen, 2004](#); [Liberti and Mian, 2009](#)). Hard information is assumed to be easy to store, to be transmitted in impersonal ways and to be independent of the collection process; all these features making it a priori difficult for hard information to be manipulated. Further, research on supervision and delegation in principal–agent models refer to hard information as being verifiable ([Tirole, 1986](#)) whereas soft information is considered to be unverifiable ([Baliga, 1999](#); [Faure-Grimaud et al., 2003](#)). In these models, a signal is unverifiable whenever it cannot be observed by a third party (the “judge”). Manipulability of information implies that soft information can be distorted whereas hard information can simply be hidden.

In the current article, we consider a principal–agent model, in which the principal has access to both, hard and soft information about the agent’s level of effort. We assume that hard information cannot be manipulated whereas soft information is subject to manipulation attempts. In our framework, agents do not distort or hide their own pieces of information but undertake influence activities in order to manipulate the soft signal collected by the principal.

The consideration of both hard and soft signals relates our study to the literature on subjective evaluations ([Baker et al., 1994](#); [MacLeod, 2003](#)). In our model, similarly to the analysis developed in [Baker et al. \(1994\)](#), the principal can propose contingent contracts that depend on a hard signal (determined by the level of production) as well as on a soft (behavioral) signal, which provides additional information about the level of effort of the agent. However, in contrast with the model of [Baker et al. \(1994\)](#) and the general framework of [MacLeod \(2003\)](#), we assume that both the principal and the agent agree on the value of the soft signal so that the signal can be treated as if it were verifiable. As a result, we can disentangle the issues related to the unverifiability of subjective evaluations ([MacLeod, 2003](#)) from the issues related to the manipulability of such evaluations.

1.1. The costs and benefits of influence activities

Influence activities have been identified as actions completed by organizational members in order to bias the decisions of managers toward more pay and promotions ([Milgrom, 1988](#); [Milgrom and Roberts, 1988, 1992](#)).³ As a general principle, this analysis suggests that influence costs can be reduced by limiting the discretion of decision makers for those decisions that have a significant impact on the distribution of rents inside the organizations but that have minor impact on the firm’s profits.⁴

In our model, we focus on optimal contracts rather than organizational design as a mechanism to reduce influence costs. In our framework, influence costs are not only incurred by the agent. Influence activities may also entail costs in terms of the firm’s productive activities as is suggested in the original definition of [Milgrom \(1988\)](#).

“That time of course is valuable; if it were not wasted in influence activities, it could be used for directly productive activities or simply consumed as leisure.”

We assume that influence activities are unverifiable so that the principal cannot prevent influence simply by punishing manipulation attempts. In our model, influence activities tend to reduce aggregate welfare by increasing information asymmetry between principal and agent. As a result, the agent’s ability to manipulate the soft signal increases the cost of implementing the high level of effort in equilibrium.

Our approach differs from the model developed by [Maggi and Rodríguez-Clare \(1995\)](#) in which agents can distort the principal’s private information in order to reduce information asymmetry. In their setting, information distortion may actually allow for the falsification of information in equilibrium, and as a result, may increase aggregate welfare. Relatedly, [Crocker and Morgan \(1998\)](#) study sharecropping and insurance optimal contracts showing that falsification is pervasive in equilibrium. In their setup, the agent who possesses private information about the contractible outcome (e.g., the size of the crop or the value of a loss) will misreport it in equilibrium given that the optimal contract provides overinsurance for small losses and underinsurance for severe ones. Misreporting in a principal–agent setting has also been studied in contexts

² Persuasion has also been modeled using an informational approach ([Milgrom and Roberts, 1986](#); [Dewatripont and Tirole, 1999](#)).

³ Also, notice that influence costs have been considered as a key element of the theory of the firm ([Gibbons, 2005](#)).

⁴ [Milgrom \(1988\)](#) also mentions the use of compensation schemes as one of the possible instruments with which to reduce influence activities. In particular, the author puts forward that the compression of wage differentials between current jobs and promotion jobs is an effective strategy for reducing incentives to influence the manager’s promotion decision.

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