Journal of Economic Psychology 47 (2015) 62–76

Contents lists available at ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

Optimal contracts based on subjective performance evaluations and reciprocity ☆

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ARTICLE INFO

Article history:
Received 22 February 2013
Received in revised form 18 July 2014
Accepted 7 January 2015
Available online 23 January 2015

JEL classification:
D01
D02
D82
D86
J41

PsycINFO classification:
2360
3630

Keywords:
Contracts
Subjective evaluations
Self-esteem
Ego-threats
Reciprocity

ABSTRACT

As demonstrated in a recent laboratory experiment (see Sebald & Walzl, 2014), individuals tend to sanction others who subjectively evaluate their performance whenever this assessment falls short of the individuals' self-evaluation. Interestingly, this is the case even if the individuals' earnings are unaffected by the subjective performance appraisal. Hence, performance feedback which falls short of agents' self-evaluations can be interpreted as an unkind act that triggers a negatively reciprocal response not only if the assessment determines agents' earnings but also when it lacks monetary consequences. We propose a principal-agent model formalizing that agents might engage into conflict in response to ego-threatening performance appraisals and show that these conflicts stabilize principal-agent relationships based on subjective performance evaluations. In particular, we identify conditions for a positive welfare effect of increasing costs of conflict and a negative welfare effect of more capable agents.

1. Introduction

While performance assessments are an integral part of any pay-for-performance incentive scheme, it is very often impossible to objectively measure workers' and especially managers' individual contributions to the success of projects or enterprises. Therefore it is widely prevalent to (also) take into account subjective evaluations in performance pay. Already in 1981 the Bureau of National Affairs reports, for example, that pay for performance systems involving subjective measures are more common than those involving only objective performance signals (see e.g. Milkovich & Wigdor (1991), Levin (2003),

☆ Parts of this work have been conducted while the authors enjoyed employment at Maastricht University. The first author gratefully acknowledges financial support by METEOR (Maastricht University). The second author was financially supported by the Dutch Science Foundation (NWO).

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http://dx.doi.org/10.1016/j.joep.2015.01.004
0167-4870/© 2015 Published by Elsevier B.V.

or Gibbs, Merchant, Van der Stede, & Vargus (2004) for more evidence on the wide usage of subjective performance appraisal systems in performance pay in e.g. investment banks, law firms, human resource management, and consultancy).

As long as subjective performance appraisals are truthful and resemble an unbiased, informative signal, their inclusion certainly enhances the efficiency of the underlying incentive scheme. The corresponding incentive problem for the evaluator, however, may limit the scope of subjective assessments for several reasons. First, performance pay on the basis of subjective performance evaluations may lack credibility. If the evaluator is the residual claimant and labor contracts specify payments on the basis of the principals' subjective appraisals, principals have an incentive to claim that performance was poor according to their perception in order to establish low wages. As a consequence, inefficiently low effort may be spend by agents unless principals can credibly commit to an honest revelation of their subjective information as, for instance, in repeated interaction or with a credible payment to a third party (see e.g. Levin (2003) or MacLeod (2003)). Second, subjective performance evaluations may generate welfare reducing conflicts initiated by the agent due to possibly diverging assessments by principals and agents. Diverging performance appraisals might generate conflict as agents have the tendency to protect their self-image and self-esteem (see e.g. Greenwald (1980)).

We propose a principal-agent model formalizing an agent's willingness to engage into (costly) conflict in response to ego-threatening feedback and show how these conflicts might stabilize principal-agent relationships based on subjective performance evaluations. We consider a principal who wants to motivate an agent to spend effort on a project – a complex good or service – where neither the effort of the agent nor the success of the project are publicly observable. The principal and the agent only receive private, i.e. subjective, signals regarding the success of the project. The subjective signals that both receive are imperfectly correlated with each other and to the actual effort level. To motivate the agent to spend positive effort, a contract has to specify payments which increase in the subjective signal of the principal.

As in Bénabou and Tirole (2002) and Suvorov and van de Ven (2009) we assume that the success of the project depends not only on the effort of the agent but also on his capability – only effort spend by a capable agent can result in a successful project. The capability of the agent is initially unknown to the agent as well as the principal. Both only know the ex-ante probability with which the agent is capable in successfully completing the specific project and up-date their belief about the agent's capability when they receive their subjective performance signal. Hence, a payment contingent on the principal's subjective performance signal does not only affect the agent's earnings, it also communicates information regarding the agent's capability. We assume that the agent builds his self-esteem on his own subjective performance signal and the corresponding up-date regarding his capability. Specifically, the agent suffers if the principal communicates a lower subjective signal (i.e. a lower capability) than the agent's own signal – the principal's signal and capability information threatens his self-esteem. If the agent creates conflict to protect his self-esteem in this situation, it is no longer optimal for the principal to always downgrade the subjective signal to save on wage payments. We demonstrate that there are conflict costs of the principal imposed by the agent such that principal and agent sign the same contract as if their subjective performance signals where verifiable.

If, however, conflict costs are too low the principal cannot credibly commit to sufficiently high-powered incentives as the agent expects her to downgrade her subjective assessment. In this situation of a binding truth-telling constraint, increasing costs of conflict may be welfare enhancing. Likewise, if conflict costs are too large, the principal has an incentive to always announce a favorable performance assessment as this avoids any conflict. As a conflict can only arise if the agent considers himself capable, a higher ex-ante capability of the agent may well be welfare detrimental in this case.

Our base-line assumption that agents create conflict in response to performance feedback that does not meet their own performance assessment has been motivated by a recent laboratory study (see Sebald & Walzl (2014)). We matched participants into pairs and randomly assigned them to the role of a principal or an agent. The agent had to click away boxes on screen and the principal could observe the agent working. The principal's payoff was determined by the percentage of boxes clicked away by the agent. After the agent worked on the task, the principal gave performance feedback that determined the share of the principal's payoff given to the agent in an *incentive treatment* in which the feedback determined the agent's wage and a *flat treatment* in which the agent received a fixed payment independent of his actual performance and independent of the principal's feedback. As both the agent and the principal were only informed about the true performance of the agent after the end of the experiment, their decisions during the experiment were based on subjective assessments. After receiving the principal's feedback, the agent had the opportunity to reduce the principal's payoff at a cost for himself. In this experiment we find that agents' reactions to the principals' feedback strongly depend on their self-perceptions. Agents reduce payoffs of principals, if the principal's feedback is below their self-perception, but accept the feedback and refuse to reduce payoffs if the feedback confirms/is higher than their own evaluation.

This pattern is observed in both treatments, i.e. when the agent's material benefit depends on the principal's feedback (incentive treatment) as well as when it is independent of the feedback (flat treatment). The willingness to reduce payoffs in the incentive treatment can be explained by existing models of reciprocity (e.g. Rabin (1993), Dufwenberg & Kirchsteiger (2004), Falk & Fischbacher (2006) and Hart & Moore (2008)).[1] These contributions argue that agents act reciprocally towards principals whenever their *payoffs* fall short of or exceed certain reference values against which they judge the kindness of the principals' actions and beliefs. However, the results of the flat treatment suggest that there also exists another motivation for payoff reductions that is independent of the payoff consequences of the principal's feedback.

[1] See Netzer and Schmutzler (2013) for a discussion of (mutually) unkind equilibrium behavior in the presence of intention based preferences.