

Can Contracts Signal Social Norms? – Experimental Evidence

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In recent years the notion that social norms matter for behavior has gained considerable attention, in economics.¹ Indeed, there is now substantial evidence that individuals are influenced in their choices by the observed behavior of others in an identical situation.² Many individuals tend to avoid deviations from prevailing norms of behavior, for instance, as these deviations may cause negative emotions such as remorse or shame.

But often individuals confront a situation in which there is uncertainty about prevailing norms. Consider, for example, an employee who has just joined an organization and may be uncertain about expected effort, working time, private Internet use in the office, or the extent to which she is expected to support colleagues. A very natural reaction for this employee would be to gather information about the behavior of colleagues that enables her to detect a potential norm of conduct. This may be easy for observable actions (such as working time), but for unobservable actions (such as productively spent working time) that are crucial for the performance of the organization this could be difficult. Even after several years in the same organization, this employee might be unable to assess the behavior of her colleagues with complete certainty in some situations and she may have to rely on additional information or clues.

On the other hand, owners or managers often have means, such as active monitoring and accounting systems, key performance figures, or employee surveys to gain a deeper understanding about existing work norms and attitudes in their organizations. Even when direct information about individual behavior is not available, they may be able to infer “average behavior” from these other sources. When designing management tools such as incentive schemes or monitoring technologies managers may naturally use this information about observed behavioral patterns. For instance, when observing an under-provision of effort, a principal may choose to use higher powered incentives or impose tighter monitoring. But this could lead to an important effect that may sometimes be overlooked, namely, that such interventions convey information about prevailing behavioral norms in an organization – and this, in turn, can have an indirect effect on employees’ actions as their perceptions about the behavior of others is altered. Indeed, Sliwka (2007), Friebe, and Schnedler (2011), van der Weele (2012), and Bénabou and Tirole (2012) have recently shown in formal economic models that

¹ See for instance Akerlof (1980), Elster (1989), Bernheim (1994), Lindbeck, Nyberg, and Weibull (1999), Kübler (2001), Fehr, Fischbacher, and Gächter (2002), Fehr and Fischbacher (2004a, b), Fischer and Huddart (2008), Bicchieri (2006), Krupka and Weber (2009), Krupka, Leider, and Jiang (2011), Huck, Kübler, and Weibull (2012). See also Young (2008) for an overview.

² Examples are Ichino and Maggi (2000), Clark (2003), Stutzer and Lalive (2004), Bradler, Dur, Neckermann, and Non (2013).

contract choices may signal information about the actions of other agents and thus create indirect effects on behavior. In a field experiment, Gneezy and Rustichini (2000a) found that introducing a fine in child-care facilities for picking up children late increased the number of parents who came late; they argue that this makes late pick-ups more acceptable.³

We explore this idea that contracts can signal social norms in a set of laboratory experiments. The key idea of the mechanism we study is most closely related to the theoretical approach by Sliwka (2007). Suppose that agents can have a preference for conformity as their behavior is influenced by their beliefs about the behavior of others. Conformists act prosocially if they believe many other agents do so. If a principal who has more information about the distribution of types in an organization now proposes a specific compensation contract, her choice may reveal information about the behavior of others and thus the prevailing norms in the organization. In particular, when a principal proposes a pure fixed wage, apparently she is confident most agents will not shirk – and in turn conformists' inclination to shirk should be reduced. On the other hand, the choice of a performance-contingent wage or a tight monitoring scheme may reveal the principal's pessimism about the behavior of the agents – and in turn increase conformists' willingness to act more selfishly.⁴ Due to the presence of selfish individuals signaling a strong work norm by choosing a fixed wage or not using a monitoring technology is costly to the principal and this indeed can make the signal credible.

To study this idea and its implications in detail we conducted several lab experiments. In our first experiment we implemented a very simple one-shot principal-agent game. In the *Baseline* treatment, principals could choose between a fixed wage (€5) and a performance-contingent compensation (€5 in case of a project success). Each principal was matched to an agent who chose a costly effort from an interval [0;100]. The success probability of the project is a linear function of the effort. We elicited the agents' efforts for both forms of compensation using the strategy method.⁵ In the *Norms* treatment, we replicated this Baseline treatment with one addition: We showed the principals a table containing the efforts chosen by participants in a preceding Baseline session and informed the agents that their principals had seen such a table (without showing the agents its content). Hence, the treatment intervention was rather weak on the agents' side: they did not have more direct information about the behavior of others – but they knew the principals had this information prior to the contract choice.

It turns out that this treatment variation has a substantial effect on the chosen efforts. When a fixed wage is chosen by an informed principal, efforts are roughly 25% higher than in the Baseline

³ For further experimental evidence on related crowding out effects see Gneezy and Rustichini (2000b), Fehr and Falk (2002), Fehr and Rockenbach (2003), Fehr and List (2004), and Mellström and Johannesson (2008). For a broader overview on the issue see Bowles (2008).

⁴ Several other theoretical models explore the detrimental effects of sanctions or performance-contingent wage schemes and give potential (behavioral) economic explanations. See, for instance, Bénabou and Tirole (2003, 2006), Ellingsen and Johannesson (2008).

⁵ See Selten (1967).

treatment, even though payoff functions for principals and agents are identical in both treatments. Agents indeed become much more trustworthy when they know that the principal who decided not to use the performance-contingent contract made this decision, being well informed about the behavior of other agents in the same situation.

The mechanism described in the above rests on an argument, that the contract choice conveys information about what the principal saw and thus will affect the agents' beliefs about the behavior of others. In a separate experiment we show that agents' beliefs about the prior information of the principal are indeed substantially affected by principal's her contract choice.

As a robustness check we apply our experimental manipulation in the context of a different experiment, the "Cost of Control" experiment by Falk and Kosfeld (2006). Here the principal decides whether to impose a minimum on the agent's contribution. As the restriction level is rather low, it represents an effective control mechanism only when the average contributions of the agents' are very low. Moreover, trust (or avoiding the use of an ineffective control mechanism) may not be viewed as a positive signal of the social norm. We observe some evidence for the lower efforts under the control contract.

The observations from the "Cost of Control" experiment are useful for discussing a potential alternative explanation for the key result of this paper. Namely, one difference between the initial Baseline and the Norms treatment is that in the latter agents may perceive that principals can compare their own performance outcomes to the behavior of others.⁶ If agents try to avoid looking selfish compared to these other agents, it may also lead to higher efforts in the Norms settings, irrespective of the information conveyed through the principal's choice.⁷ And indeed, in our first experiment, efforts are higher, on average, in the Norms treatment also under the contingent compensation (even though this difference is not significant). But in the "Costs of Control" experiment efforts under the contingent compensation/restriction are *lower* in the Norms treatment (where agents can be compared) than in the Baseline treatment (where this is not possible). Hence, the results should not be driven by the fact that outcomes are comparable with expected outcomes of other agents, but rather by the information conveyed on the size of these efforts by the principal's choice.

Our study is related to other recent contributions on the interaction of social norms and contracts. According to the model by Bénabou and Tirole (2012) norms arise not because of preferences for conformity but because the behavior of others influences how publicly observed actions affect social esteem. In their model, agents differ with respect to their intrinsic motivation to choose a certain prosocial action and have a preference to be esteemed, i.e. that others perceive them to be intrinsically

⁶ Note that in the Contract Choice experiments principals never did learn their agents' effort and agents were explicitly told this was not the case. Hence, direct effort comparisons are unfeasible also in the Norms treatment. Nevertheless, such a motivation is conceivable as agents were aware that principals learned whether the project was successful or not, which also yields some information on agents' efforts.

⁷ This would also be an indication of the importance of social norms but not of the norms-signaling effects of contracts.

motivated. An observer's perceptions of a certain act depends now on the equilibrium strategies all agents in the population choose – hence, social norms arise because observed actions have different signaling values that are conditional on the strategies of other agents. Similar to Sliwka (2007) changes in extrinsic incentives may reveal a designer's private information on the distribution of types, and therefore affect the way in which outside observers interpret the chosen actions. In the models by Friebel and Schnedler (2011) and van der Weele (2012) there is a complementarity between efforts of different agents, and therefore information about the behavior of others is directly valuable to improve coordination. Galbiati, Schlag, and van der Weele (2013) studied behavior in a twice-repeated “weakest link”-coordination game experiment in which there were technological complementarities. They compared sanctions that were exogenously imposed after the first round unconditional on previous behavior, to that of sanctions endogenously imposed by a subject who observed previous behavior and benefitted from high levels of coordination. They found that players who made high contributions in the first round contributed less under endogenous sanctions in the second round.

In our setup, the behavior of agents is not publicly observable; there is no interdependence in production between the agents, and the agents themselves do not observe the behavior of others. We show that contract choices reveal information on norms and this matters for behavior even when individual choices remain unobservable, and in the absence of any technological interdependence. Hence, the observed effects can neither be driven by image concerns nor by technological complementarities, but are well in line with the idea that people can intrinsically prefer norm compliance.

To conclude, we show in a series of lab experiments that contract choices can convey information about the behavior of others previously observed by the contract designer, and this information has a substantial impact beyond the direct incentives effect of the contract. Individuals react very differently to an identical contract when they know that the contract choice is based on richer information about the prior reactions of others. Contract choices thus reveal information about prevalent social norms and also shape behavior indirectly beyond direct material incentives.

It is important to stress that in our experiments these effects occur even though agents' behavior is not observed by peers and that ex-post they do not even receive information on the distribution of choices. Hence, the mechanism relies on an apparent intrinsic tendency for conformity and not on technological complementarities or image concerns. It is thus applicable to, and should be relevant for, a broader number of contexts, namely, all situations in which a first mover's choice can reveal information about behavior in a broader population which, in turn, can affect the behavior of second movers beyond their direct economic motives.

Moreover, our further experiments reveal that the signaling effect works in two directions in our context: When there is a powerful incentive technology available, not using this alternative and trusting the agents is a strong signal by an informed principal that many people are trustworthy. And

while being risky, this indeed substantially increases the trustworthiness of the responders. Norms signaling thus leads to “hidden benefits of trust”. If trust is a weaker positive signal and, more importantly, setting contingent incentives now reveals a bad social norm and thus creates “hidden costs of control.” And indeed we find that Falk and Kosfeld’s (2006) hidden costs of control are more detrimental when principals are better informed about social norms of behavior.

Our results also have implications for the design of incentive schemes in practice. A direct implication is that when employees (or citizens) are not well informed about norms of behavior but the designer of an incentive scheme (or a law) is, the choice of the scheme will most certainly have signaling effects as it reveals information about prevalent norms. Moreover, the set of feasible alternatives affects the signaling value of a contract choice. When, for instance, employees know that non-distorted high-powered incentives are easy to implement in principle, not using this alternative is a strong signal that the social norm is trustworthy. On the other hand, if a firm uses a rather “shaky” technology to monitor behavior, this may reveal that apparently many employees are selfish. Both effects should lead to the optimality of lower powered incentives compared to a situation with symmetric information.⁸

Of course, many important questions still need to be addressed. A key challenge is to study the consequences of changes in incentive structures on social norms in field settings, for instance by exploiting information from employee surveys or using lab experiments in firms to elicit social norms before and after a change (see, for example, Burks and Krupka (2012) for an approach to elicit norms in firms). Moreover, in smaller firms or communities people may have rather precise information about norms of behavior in their direct environment of colleagues or neighbors but not on broader groups of all employees in a large firm or most members of a society. It seems important to study the extent to which contract choices can affect norms of behavior in subgroups that can mutually observe each other.

To gain a deeper understanding of the interplay between contracts and social norms in organizations is an important field for further research. While it is often easy to change formal rules in organizations, changing the complex system of informal rules is typically a much more demanding endeavor. But, as we have pointed out in this study, changes in formal rules affect perceptions about informal rules of behavior and thus shape these social norms. If we aim at giving better advice to practitioners on how to optimally design incentives, these indirect effects should not be disregarded as they have significant potential to alter the way in which changes in the formal rules affect behavior and, in turn, the overall performance of organizations. .

⁸ See Bénabou and Tirole (2012), Section 4, for a related discussion on “expressive law”, i.e. the role of law in conveying a society’s norms of behavior, which may lead to the choice of “softer” laws in order to signal that for instance only very disreputable people do not follow the norm and, hence, the need to induce tough sanctions is low. See also the discussion in Bowles (2008).