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Respect as an Incentive

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Abstract: Assuming that people care not only about what others do but also on what others think, we study respect as a non-monetary source of motivation in a context where the length of the employment relationship is endogenous. In our three-stage gift-exchange experiment, the employer can express respect by giving the employee costly symbolic rewards after observing his level of effort. This experiment sheds light on the extent to which symbolic rewards are used, how they affect employees' further effort, the duration of relationships, and the profits of employers. Furthermore, we study whether employers' decisions to give symbolic rewards are driven by strategic considerations, by manipulating the bargaining power of employers and employees. We find that employers make use of symbolic rewards and chiefly to express their satisfaction with the employee. Indeed, symbolic rewards are more frequently used when there is excess supply of labor in the market while they are used in almost the same proportion when the market is balanced and when there is excess demand of labor. They are associated with higher profits and increased probability of continuing employment relationships. Overall, however, the opportunity of expressing respect does not improve efficiency compared with an environment in which it does not exist, possibly due to a crowding-out of extrinsic incentives by the availability of non-monetary incentives.

1. INTRODUCTION

In parallel with the accumulated knowledge about the role of monetary incentives in improving the performance of organizations, it has become increasingly clear that people are also motivated by non-monetary rewards. However, the interrelationship between monetary and non-monetary rewards has become the subject of economic analysis only recently; see Rebitzer and Taylor (2010) and Charness and Kuhn (2010). With a focus on the importance of other-regarding preferences, the cornerstone of this work is the observation that the quality of interactions between principals and agents is affected by the degree to which the relationship is characterized by trust, fairness and reciprocity; see e.g., Charness (2004), Fehr *et al.* (1993, 1997, 2007), and Fehr and Schmidt (1999). Hence, it has been shown that employees respond to generous wage policies by reciprocating and putting forth additional effort and that the introduction of monetary rewards may sometimes crowd-out intrinsic motivation, and has unintended counterproductive consequences; see e.g., Gneezy and Rustichini (2000) and the discussion in Fehr and Falk (2002).

While there is much research on agents' reciprocal behavior, economic work on non-monetary rewards used by the principal to express trust or recognition is extremely scarce. Exceptions are Falk and Kosfeld (2006) who study the principal's choice of autonomy provided to employees and Dickinson and Villeval (2008) who analyze the choice of monitoring intensity. While both examine *ex ante* actions (the principal sends a signal of his trust *before* effort is provided), we are chiefly interested here in ex-post actions, namely the expression of respect by the principal to the agent. Indeed, another important source of motivation in many workplaces is the feedback agents receive *ex post* on their actions.

Feedback is not only or necessarily related to the quantitative evaluation of the employee's performance, it can also, as in subjective performance evaluations, express the employer's satisfaction with the behavior of the employee. Studies of how employers value their employees, how they express it (if at all), and how this in turn affects employee behavior and performance are rather thin on the ground.[1]

The potential importance of non-monetary rewards may derive from the fact that people are not only motivated by what others do to them (other-regarding preferences), but also by what others think about them (self-regarding motives); see Ellingsen and Johannesson (2007a and b).[2] Agents derive utility from thinking of themselves as good, skilled, and valuable (Benabou and Tirole (2002, 2006)), and consequently have a desire for praise and social esteem; Ellingsen and Johannesson (2007a). This could contribute to explain why non-monetary job attributes matter in that people enjoy working in firms where managers provide recognition (Lazear and Shaw (2007); see also Bewley (1996) on work morale). Indeed, employees value the attention expressed by their employers and the good contact with them.[3] From a social psychology perspective, Rhoades and Eisenberger (2002) provide evidence of the importance of organizational support on employees; Webster *et al.* (2003) and Gaines *et*

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[1] A few papers, e.g., Ariely *et al.* (2009), Ball *et al.* (2001), Charness *et al.* (2010), and Kosfeld and Neckermann (2010), examine status and awards as reward schemes. Note that awards differ from respect as we define it here in that awards are typically visible to all employees and are in fact used to create competition among them. Instead, respect can be expressed in such a way that it is only visible to the employee who receives it, as is the case in our study.

[2] Ellingsen and Johannesson (2007b) show for example that anticipated verbal feedback from recipients affects the decisions of dividers in a splitting game although the relationship is anonymous and one-shot. Similarly, Xiao and Houser (2007) find that the willingness to avoid negative emotions expression through written messages from the receivers promotes fair exchange in a one-shot dictator game. Even more, Dana *et al.* (2006) show that many more subjects prefer exiting rather than playing a dictator game when the recipients are informed about the choice faced by the dictator than when uninformed on this option.

[3] As emphasized by Kandel and Lazear (1992) and subsequent papers on peer pressure, employees also value the regard of their co-workers. But this dimension is out of the scope of this study.

al. (2005) show the importance of praise after a successful performance. This could also explain that job (dis)satisfaction can predict quits, controlling for wages and hours of work (e.g. Clark, 2001). Cottini et al. (2009) find that having unsupportive boss leads to a five percentage point increase in the probability of employee voluntary separation.

Our key hypothesis in this paper is that the expression of respect is an important source of motivation due to the existence of esteem needs. Respect to employees is signaled notably by the principal's attention and the praise for the employees' effort. Following Ellingsen and Johannesson (2008), we model respect by providing the principal with the possibility of expressing his approval of the agent's choice of effort through the use of symbolic rewards.[4] The agent can reward the expression of respect or sanction a lack of respect through the duration of the employment relationship and his choice of effort level in the subsequent period if both the employer and the employee agree to continue the relationship. If the employees value respect, this means that the employer can pay them with a combination of monetary rewards and respect. Moreover, as emphasized by Ellingsen and Johannesson (2007a), the employer can increase the value of respect by proving to be a worthy audience. This means that the symbolic rewards sent by the employer have an influence on the employee if and only if the employer is perceived of as a respectable person, that is, his intentions are good. This suggests that the expression of respect should be costly to the

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[4] The experimental literature has so far investigated more the role of symbolic punishment than that of symbolic rewards (. See for example Masclet *et al.* (2003) on moral sanctions in a public good game. In a field experiment with fishermen, Carpenter and Seki (2010) allow the participants to buy unhappy faces to express their social disapproval to the rest of their group. This is different from our game since they consider a public good game and players can only express disapproval. Indeed, these ratings aim at building the sellers' public reputation (see for example Bolton *et al.* 2004) whereas we are only interested in a principal-agent bilateral relationship with no public display of respect.

employer. In particular, the symbolic rewards may have no value in the eyes' of the employee if associated with a very low wage level.[5]

This paper addresses three sets of questions. First, do employers use costly symbolic rewards and if so, are they complements or substitutes to wages and how do they influence profits and efficiency? Second, do employees value the respect expressed by the employers? For given wages, does respect increase the length of the relationship with the same employer and further effort? Third, to which extent is employers' use of symbolic rewards influenced by strategic considerations? Needless to say, testing the role of respect would be very difficult by means of survey or registry data. We have therefore designed a laboratory experiment based on a gift-exchange game. The structure of the baseline treatment is inspired by Brown, Falk and Fehr (2004). The first stage is a trading phase in which employers submit wage offers on the market. These offers can be public or private as employees and firms can be identified with identification numbers that enable players to build long-term relationships. In the second stage, the employees who have accepted an offer decide on their level of effort. In the respect treatment, we add a third stage in which the employer can assign symbolic rewards to her employee to show her satisfaction. These rewards do not affect the employee's payoff but they are costly to the employer, and this is known to all players.

We compare three market conditions: one in which there are the same number of employers and employees on the market, one in which there are 8 firms and 12 employees ("excess supply"), and one in which there are 12 firms and 8 employees ("excess demand"). This

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[5] From a theoretical point of view, Dur (2009) studies the substitutability between the expression of managers' care through the wage level and socio-emotional resources.

manipulation allows us to measure whether the use of symbolic rewards is affected by the market conditions and by strategic considerations. Indeed, if employers use more symbolic rewards in the excess demand condition and less in the excess supply condition, conditional on the same level of effort, this suggests that the expression of approval is partly driven by strategic considerations. This would indicate that employers praise employees to be better able to retain them when they have to compete with other firms, or that they pay less attention when employees are easier to recruit. The efficiency of symbolic rewards may be altered if employees understand that they are driven by strategic motives.

Our results are striking. We find that a relatively important fraction of employers use costly non-monetary rewards to praise employees for their effort. The use of symbolic rewards is associated with slightly lower wages and higher profits. On the employees' side, at the individual level receiving symbolic rewards increases the likelihood of accepting an offer from the same employer than in the previous period and motivates the employees to increase their effort further. This result is all the more important as praise is not made public and therefore, these symbolic rewards must be distinguished from status-improving elements. We also find that the use of symbolic rewards is increased in the excess supply condition and is similar when the market is balanced and when there is excess demand. This indicates that employers are more likely to use symbolic rewards to express their satisfaction with the employees' effort than to use them strategically to cope with competition on the labor market. However, at the aggregate level, efficiency as well as the average duration of the employment relationship are not higher when it is possible to express respect. The opportunity of paying respect is accompanied with less generous contractual conditions offered on the market. This suggests that symbolic rewards could to some extent crowd-out

extrinsic monetary incentives. Indeed, we observe a (weak) substitution effect between monetary and non-monetary incentives in the firms using symbolic rewards, which may in turn push down the rents offered by the other firms.

The remainder of this paper unfolds as follows. Section 2 sets out the design and procedures of the experiment and Section 3 gives the theoretical predictions. The presentation of our findings is in Section 4. The fifth section discusses our results and concludes.

2. THE EXPERIMENT

2.1. Experimental design

Our experiment involves firm- and employee-subjects and it is based on a 2x3 design, that is, it consists of two treatments, the baseline treatment and the respect treatment, each being played under three different conditions: a balanced labor market, excess supply or excess demand in the labor market.

Our baseline treatment is close to the design used by Brown, Falk and Fehr (2004) in their incomplete contract condition with a possibility for employers and employees to enter into long-term relationships. It consists of a two-stage gift-exchange game that is played during twelve trading periods. In the first stage of each trading period in our balanced labor market condition, ten firms and ten employees can contract on the labor market during three minutes.[6] The duration of this trading phase can be shortened if the maximum number of contracts were concluded before the three minutes have elapsed. An identification number is

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[6] A major difference with the design of Brown, Falk and Fehr (2004) (henceforth: BFF) is that instructions are contextualized. We use notions such as employer, employee, wage, quality of work. This choice is justified by the nature of our treatment manipulation (see details below). Other differences with our design include the use of separate instructions for employers and employees in BFF, 15 trading periods instead of 12, ten workers and seven firms instead of ten workers and ten firms in our balanced market condition.

assigned to each firm and each agent that is kept constant until the end of the game. This allows traders to build long-term relationships. Only firms can submit contracts on the labor market; a worker is not allowed to make offers. A contract offer consists of a wage, *w,* and a desired level of effort, *ê,* with $w \in (0,1,\ldots,100)$ and $\hat{e} \in (1,2,\ldots,10)$. A contract offer can be either public or private. Public offers are submitted on the market and are made visible to all employees and firms. Private offers are addressed to a specific employee and cannot be observed by any other firm or employee.[7] Irrespective of whether the offer is public or private, the identification numbers of the firms who submit an offer are always made visible. In a particular period, a firm can submit as many public and private offers as it desires but the firm cannot contract with more than one employee and employees can accept at most one contract. The identification numbers of the employees who have not yet accepted an offer are always visible to the firms. As soon as an employee accepts an offer, his identification number disappears from the pool of available employees. All the offers submitted by the employing firm disappear from the market and can therefore not be accepted anymore. The employees can observe all public offers submitted on the market and the private offers that are addressed specifically to them. In our game, an employee cannot accept an offer during the first 20 seconds. This time lag forces employees to observe the market and to avoid precipitation in the acceptance of contract offers.

As soon as an employee has accepted the offer of a firm, in the second stage of the game he chooses his actual level of effort *e* with $e \in (1,2,\ldots,10)$. It is common information that the firm's desired level of effort is not binding and that the employee's actual effort may differ

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[7] On the design of games with public vs. private contracts with an identification of the traders, see also Kirchsteiger *et al*. (2001).

from it. The effort cost function is convex and the cost schedule for the employees (the same as in BFF (2004)) is displayed in Table 1.

Table 1. The cost of effort

Effort	1	2	3	4	5	6	7	8	9	10
Cost	0	1	2	4	6	8	10	12	15	18

At the end of the second stage, the employing firm (but not the other firms) is informed about the effort level actually chosen by its employee. Trading partners are informed on both the firm's and the employee's payoffs.

The payoff of the firm is determined as follows:

$$\pi^F = 10e - w \text{ if a contract has been accepted, and 0 otherwise} \tag{1}$$

The payoff of the employee is defined as follows:

$$\pi^E = w - c(e) \text{ if a contract has been accepted, and 5 otherwise} \tag{2}$$

The amount of 5 can be interpreted as an unemployment benefit.

At the end of a period, all contracts are terminated. At the beginning of the next trading phase, like in BFF (2004), no employee has a job and no firm has an employee. Therefore, to continue a relationship a firm has to make a private offer to the same employee as in the previous period and the employee has to choose this offer among the available offers.

Our aim in this experiment is to analyze whether firms are willing to pay for expressing respect through a positive feedback to their employees and whether employees value receiving praise for their effort. The respect treatment is similar to the baseline treatment, except that a third stage is added after the firm observes her employee's actual effort level. In this stage, the firm can send between 0 and 5 symbolic rewards to her employee to

"express her approval" and the employee is informed about the number of symbolic rewards he has received from the firm. The symbolic rewards consist of raised thumbs that usually represent satisfaction, approval or praise of somebody's action.[8] Receiving thumbs does not modify the employee's payoff function that remains the same as in (2). In contrast, assigning symbolic rewards is costly to the firm, as each thumb assigned costs one point. Indeed, paying respect is more than simply expressing praise: whereas the later may not cost anything (and therefore may be hypocritical), the former requires some effort on the part of the person who pays respect. The payoff of the firm in the respect treatment becomes:

$$\pi^F_R = 10e - w - c(s), \text{ if a contract has been accepted, and 0 otherwise} \qquad (3)$$

with s denoting the number of symbolic rewards assigned to the employee.

Employees know both that the assignment of thumbs reduces the firm's payoff and the cost of the thumbs. In contrast, the number of thumbs bought by a firm is not common information in the market: only the employee of the firm is aware of her decision. In all treatments, there is a history box displayed on the subjects' screens, showing for each period, whether a contract has been concluded and if so, the identification number of the co-contractor, whether it is private or public, the contractual wage, the demanded level of effort, the actual level of effort, and the number of thumbs given to the employee.

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[8] In gladiatorial combats in the ancient Rome, a thumb up was usually considered a signal of approval for a gladiator's life to be spared, although the interpretation is now contested. In medieval times, it has been used to seal transactions. This gesture is today considered as a sign of praise or approval of good or well-done behavior in most cultures in Europe, North America or China. In a cross-country survey about the meaning of this gesture, Morris, Collett, Marsh and O'Shaughnessy (1979) mention the following answers: « All right, A.O.K., bang on, champion (France), everything's fine, everything's fixed, excellent, first class, fixe (Portugal), good luck, great, great stuff, I agree, I made it, it's a winner, it's in the bag, kalo (Greece), O.K., ready to go, really good, right on, solid, Spitze (Austria), spot on, success, superb, tops, va bene (Italy), very good, victory, you are right, you've done well. »

The use of symbolic rewards may express a sincere praise of the employee's effort by the firm, but it may also be used strategically to retain an employee and to prolong a profitable relationship. To capture this dimension, we manipulate the structure of the labor market. We deviate from the balanced condition by varying the proportion of firms and employees on the market. In the excess demand condition, 12 firms compete to hire 8 employees. In the excess supply condition, 12 employees compete to contract with 8 firms. Each treatment has been played under the three conditions. Our hypothesis is that if the firm uses symbolic rewards strategically to retain an employee, the use of thumbs conditional on the same effort level should decrease (increase) in the excess supply (demand) as compared to the balanced market condition.

2.2. Procedures

The experiment has been run at the *Groupe d'Analyse et de Théorie Economique* (GATE-CNRS), Lyon, France. 180 undergraduate students from the local engineering and business schools participated in this experiment, after receiving an invitation by the ORSEE software (Greiner, 2004). For each labor market condition, two sessions were conducted in the respect treatment and one in the baseline treatment. Thus, nine sessions in total have been run for a total of 1080 observations. No subject participated in more than one session.

The experiment was computerized using the REGATE software (Zeiliger, 2000). Upon arrival, the subjects drew a computer tag from a bag and were randomly assigned to a computer terminal. After the instructions were read aloud by the experimentalist, the subjects answered a questionnaire to check that they understood the rules of the game (see Appendix). All questions were answered in private and oral communication between the

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subjects was not allowed. Then the subjects played three practice periods with only the trading phase of the game in order to become familiar on how to trade on the market, but without revealing their intentions regarding the choice of effort or the use of symbolic rewards. During these periods, the subjects received a provisional identification number. The practice periods were not paid. Once they were completed, subjects received a new identification number that they kept until the end of the experiment.

A session lasted on average approximately 90 minutes including the payment of subjects. On average the subjects earned €14.85, including a show-up fee of €5.

3. PREDICTIONS

The subgame-perfect equilibrium of the finitely repeated game in the baseline treatment is straightforward. In the second stage of the game, since contracts are incomplete any employee should choose the minimum level of effort that minimizes its cost, i.e. $e^*=1$. Anticipating this behavior, any firm should offer the minimum feasible wage level, $w^*=5$. Indeed, since the unemployment benefit amounts to 5, an employee should accept any contract offering at least $w=5$, whatever the desired level of effort. Since all the employees are expected to behave selfishly, firms have no reason to submit private contract offers and should prefer to submit public offers that can be seen by all the applicants on the market. These predictions hold for each period and therefore, there is no reason to expect long-term relationships to emerge.

These standard predictions are not modified in the respect treatment since expressing respect is costly to the firms and symbolic rewards should not increase effort since they do not affect employees' earnings. Consequently, firms should never buy symbolic rewards. The share

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of private contracts, the average duration of contractual relationships, the average wage and the average effort level should be similar across treatments. When there is excess supply on the labor market, the predictions are the same as when the market is balanced. When there is excess demand of labor, the competition between firms may motivate firms to offer a higher wage than in the baseline or excess supply conditions for increasing their chance to employ a worker. However, in such a situation, the employees still choose the minimum level of effort, $e^*=1$, and therefore the firms cannot offer a wage higher than $w=10$ because otherwise they would make a loss. As a result, $w^*=10$ is the equilibrium wage in this condition. This indicates that the surplus is captured by the employees, whereas in the other conditions it is captured by the firms. Since the equilibrium effort is the same as in the other conditions, firms remain indifferent between making private or public offers. Nor is there any reason for more long-term relationships to arise in this condition than in the others.

However, we know from the literature on gift-exchange games that the average behavior usually deviates from the sub-game perfect equilibrium. Based on the inequity aversion model of Fehr and Schmidt (1999), BFF (2004) show that in the game corresponding to our baseline treatment, if there are sufficiently many fair subjects, there is an equilibrium where all the employees choose a higher than minimum level of effort in all periods except the last one and where only the truly fair subjects choose a non-minimum effort in the last period of the game. Since fair workers reciprocate to the offer of positive rents, the firms offer profitable rents up to the last period and therefore, the prospect of receiving a rent even in the last period disciplines the selfish workers who mimic the truly fair subjects up to the penultimate period. This mechanism is facilitated by the possibility of making private offers and of building long-term contracts. In summary, in the presence of a sufficiently high

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proportion of socially oriented subjects, we should observe $e>e^*$, $w>w^*$, a positive share of private offers and an average duration of employment relationships significantly higher than 1. These predictions hold for both treatments and all conditions.

These behavioral predictions derive from the assumption that people care about what others do. Indeed, according to this approach, a player's utility depends not only on his own payoff but also on the payoffs of others. Here we are interested in examining what happens when people also care about what others think. We assume that people dislike looking selfish, especially if others behave generously, and they take pride in being thought of as a valuable person. Following Ellingsen and Johannesson (2007), our prediction is that the search for social esteem and praise leads to the choice of non-minimum effort levels by a fraction of the employees and to the offer of generous wages by a fraction of the employers. The level of effort will be higher if the intentions of the principals are perceived as being good, but unlike in reciprocity-based models, employees who search for esteem may exert a level of effort higher than the minimum (1) *even* when they receive a low wage. We also predict that the level of effort chosen by the employees who search for esteem should be higher in the respect treatment than in the baseline since the employer has the possibility to express his praise formally. Long-term relationships are more likely if employees receive praise for their effort and if they believe their employer is sincere.

If the firms believe that a sufficient share of employees have a concern for social esteem, they may praise their employees by sending them costly symbolic rewards when the latter choose non-minimum effort levels. Symbolic rewards represent another way for them to signal their pro-social type. Therefore, conditional on the same rent offered, the average

level of effort, the share of private contract offers and the average duration of the employment relationship should tend to be higher in the respect treatment than in the baseline. However, selfish firms can also use costly symbolic rewards strategically, up to the penultimate period, if *i*) the cost of thumbs is more than compensated for by the additional surplus created by the employee's effort as compared to a situation where no respect is expressed, and if *ii)* thumbs increase the willingness of a reciprocal employee to stay in the same firm.[9] Selfish firms can use symbolic rewards as a partial substitute for generous wages. However, these firms should never send symbolic rewards in the last period since there is no chance to continue the relationship further.

The various market conditions help in identifying the motivation of offering symbolic rewards. If we observe that, conditional on the same effort level, firms express less respect when there is excess supply and more respect when there is excess demand than in the balanced market condition, this indicates that employers use symbolic rewards strategically to retain employees. If the opposite is found (more respect expressed when there is excess supply and less when there is excess demand), it lends support to the notion that symbolic rewards may be used to express sincere respect.

4. RESULTS

Summary statistics on the choice of wages, effort and the use of symbolic rewards by treatment and by condition are given in Table A in Appendix. This Table shows, inter alia, that the percentage of private offers, wages, and rents offered by the employers, the effort

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[9] Note that one additional unit of effort increases the firm's payoff by 10 points while each thumb costs 1 point. Therefore, if there is more than 10% chance that the employee they want to maintain cares about receiving symbolic rewards (i.e. accepts a private offer from the same firm and increases his level of effort by at least one unit), they should optimally offer thumbs.

exerted by the employees, and the average duration of relationships are higher than expected from standard predictions in all conditions and treatments. This confirms the evidence provided by several previous gift-exchange experiments, and in particular by BFF (2004), that behavior does typically deviate from the standard subgame perfect equilibrium. Our analysis of the results focuses on the use of symbolic rewards by firms and its consequences on employees' effort and ability to build long-term relationships. Before analyzing the determinants of firms' and employees' behavior and before studying the profitability of the expression of respect we first present some summary statistics.

4.1. The use of symbolic rewards

Overall, we find that 23.31% of the firms give symbolic rewards to their employee when they have the opportunity to do it and when the market is balanced. When they choose to express their approval they give on average 1.98 thumbs. These values vary with the state of competition on the market, the private nature of contracts, and the employees' level of effort.

Regarding the structure of the labor market, we find that the use of symbolic rewards is lowest (highest) when there is excess demand (supply) in the labor market. Indeed, 20.83% of firms use them in the excess demand condition and 28.80% in the excess supply condition. The average number of thumbs given is always higher when there is competition on the labor market than when the market is balanced, with 2.40 thumbs assigned in the excess demand condition and 2.38 in the excess supply condition. A series of paired Mann-Whitney tests using the conservative assumption of one independent observation for each individual indicate that none of the differences between conditions are significant ($p>0.10$, two-tailed). This suggests that employers do not primarily use thumbs strategically to cope

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with competition on the market. If this was the case, we would observe employers sending significantly less (more) symbolic rewards when it is easy (difficult) to replace employees on the labor market. We observe the opposite. We also find that in the last period, the percentage of firms still offering thumbs is 7.84%. The behavior of these firms cannot be motivated by strategic considerations.

Regarding the nature of contracts, according to the subgame perfect equilibrium, firms should be indifferent between employees and should only make public offers. A first thing worth noting is that 59.19 % of all accepted offers are private in the balanced market condition (the corresponding percentages are 52.33 in the excess demand condition and 67.25 in the excess supply condition). The use of symbolic rewards is more frequent in private contracts than when the contract results from a public offer on the market, but the difference is significant only when the market is balanced. Indeed, in the balanced market condition, 34.33% of private contracts are associated with the provision of thumbs while it is the case in only 8.82% of public contract offers (Wilcoxon test, with the individual as a unit of observation, $p = 0.013$). The corresponding percentages are 28.18% and 10.98% in the excess demand condition ($p = 0.328$) and 34.78% and 19.74% in the excess supply condition ($p = 0.409$).

Contrary to the subgame perfect equilibrium, employees choose a non-minimum level of effort on average and firms are all the more likely to give symbolic rewards to their employees as their level of effort is higher. Figure 1 displays the percentages of firms that give symbolic rewards for each level of effort in each condition, while figure 2 shows the average number of thumbs given by effort level and condition.
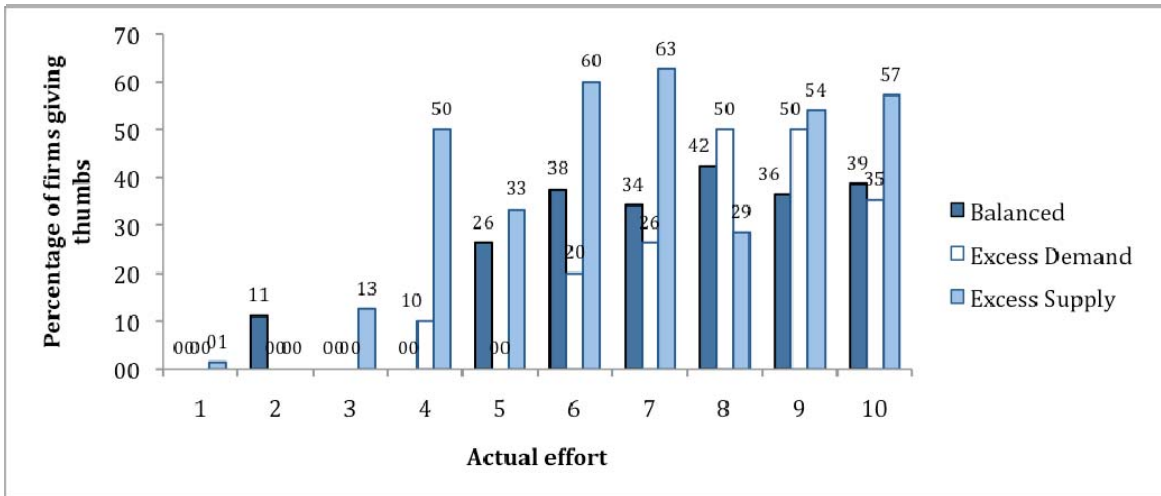
Fig.1. Percentage of firms giving symbolic rewards, by level of effort and by condition
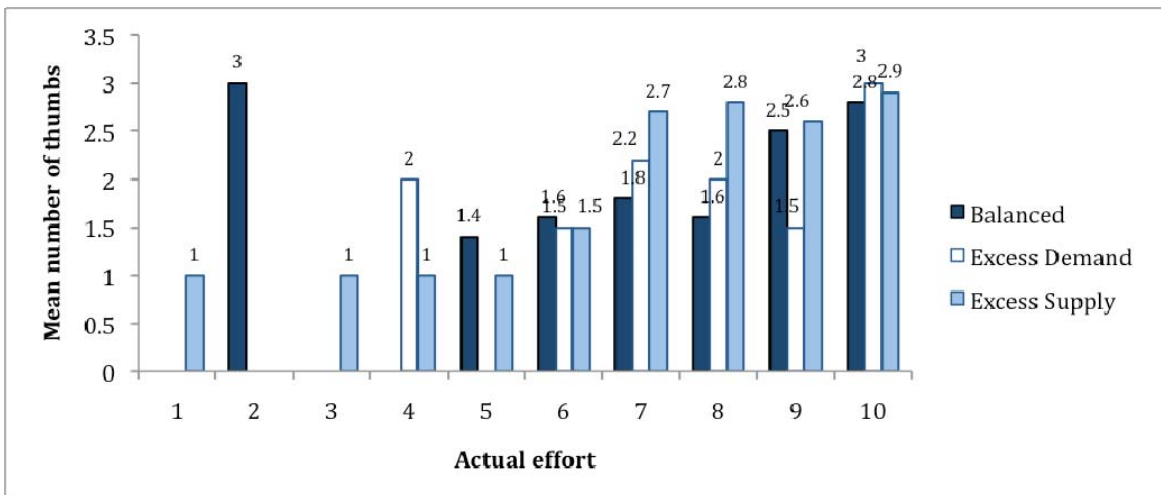

Fig.2. Mean number of symbolic rewards, by level of effort and by condition

Figures 1 and 2 show that in each condition, the higher the actual level of effort, the higher is the percentage of firms giving symbolic rewards and the higher is the number of thumbs assigned. It should be also noted that for many effort levels, the percentage of firms giving symbolic rewards is higher when there is excess supply on the market.

One behavioral prediction is that an indirect effect of recognition of an employee's effort by provision of symbolic rewards is that it facilitates the creation of relational contracts. The

distribution of thumbs should therefore be associated with an increased probability of continuing the employment relationship and longer contract lengths. Figure 3 displays the relative frequency of employer-employee relationships initiated by symbolic rewards during the first period of interaction for three total duration categories and in each market condition.
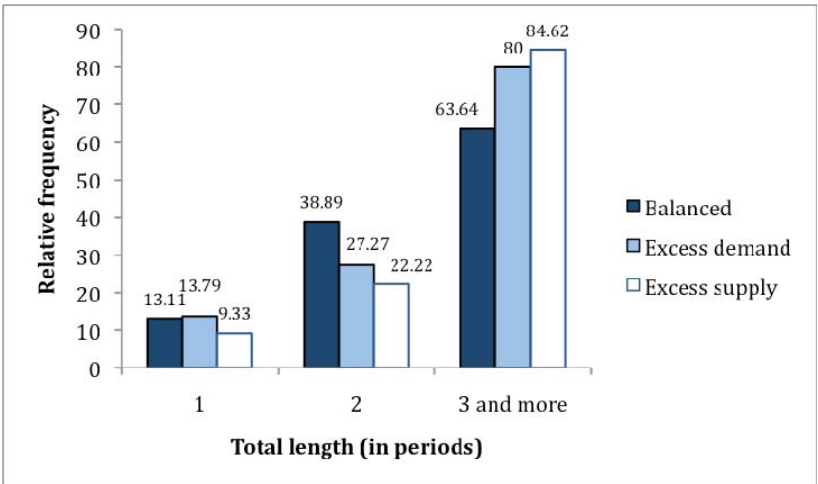

Fig.3. *Proportion of relationships initiated by symbolic rewards, by total duration (number of periods) and market condition*

Clearly, there is a strong positive association between the initial assignment of symbolic rewards and the total length of the employment relationship under all market conditions. In the balanced condition, only 13.01% of the relationships that end after the first period of interaction gave rise to the provision of symbolic rewards. In contrast, in 63.64% of the relationships that lasted for at least three periods the firms sent symbolic rewards during the first period of interaction. This is even higher in the excess demand condition (80%) and the excess supply condition (84.62%), indicating that those firms that succeed in building relational contracts (i.e. longer-term contracts with the same employee) are likely to be the same as those that pay respect to their employees. This does not imply, however, that symbolic rewards are given throughout the duration of the relationship. Indeed, in the

balanced condition, the percentage of firms giving symbolic rewards increases from 19.87%

when the current contract length is 1 period, to 20.69% when it is 2 and 54.55% when it is 3,

and then it decreases to 28.89% for longer current lengths. This is also observed in the

excess demand condition (the corresponding percentages are 19.70, 33.33, 30, and 12.5,

respectively) and the excess supply condition (20.75, 38.71, 61.54 and 31.71, respectively).

4.2. The determinants of firms' and employees' decisions

Moving next beyond the bivariate relationships we considered above, we perform some

regression analyses of the decisions made by the firm and employee subjects, respectively.

We first analyze the determinants of the firms' decision to give symbolic rewards to their

employees. We estimate four random-effects Tobit models in which the dependent variable

is the number of thumbs given. Random effects models are employed since we observe

several decisions by the same firm and Tobit models are used to account for the fact that

many observations are left censored. The independent variables include a dummy variable

for private contracts, the rent, the actual effort exerted by the employee, the current length of

the employment relationship, and the gender of the employer. Moreover, a time trend is

included to account for the evolution of behavior over time. The results of these regressions

are displayed in Table 2. The first column contains the estimates on pooled data for all

market conditions of the respect treatment, including dummy variables for the excess

demand and the excess supply conditions. The three following columns report estimates for

each of the three market conditions separately.

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Table 2. Determinants of the number of thumbs given by the employer (random-effects Tobit models)

Dependent variable: Number of thumbs assigned	All conditions (1)	Balanced market (2)	Excess demand (3)	Excess supply (4)
Actual effort	0.805***	0.781***	0.984***	0.780***
	(0.082)	(0.176)	(0.210)	(0.095)
Rent	-0.030*	-0.115***	-0.012	-0.006
	(0.015)	(0.043)	(0.039)	(0.016)
Private contract	0.324	1.398**	0.349	-0.467
	(0.388)	(0.647)	(0.881)	(0.535)
Length of the relationship	-0.417***	-0.200	-0.761***	-0.420***
	(0.096)	(0.146)	(0.281)	(0.131)
Excess Demand	0.032	-	-	-
	(0.631)			
Excess supply	1.022*	-	-	-
	(0.599)			
Period	-0.019	-0.028	0.001	-0.030
	(0.054)	(0.089)	(0.139)	(0.072)
Male employer	-0.935*	-0.848	-0.957	-0.948
	(0.508)	(0.958)	(0.806)	(0.926)
Constant	-3.883***	-2.611	-6.029**	-2.306
	(1.044)	(1.815)	(2.623)	(1.463)
N	619	236	192	191
Left-censored obs.	469	181	152	136
Log Likelihood	-463.242	-166.850	-135.064	-145.443
Wald chi2	121.14	28.72	28.57	80.93
Prob >chi2	0.000	0.000	0.000	0.000

Note: Standard errors are in parentheses. *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

Table 2 shows that the likelihood that one or more thumbs are given is consistently increasing in the employee's level of effort in all market conditions.[10] Thus, thumbs are given to praise the employee for his effort. The influence of the other variables varies according to the market conditions. When the market is balanced, private offers are associated with a higher probability that a symbolic reward is given and there is a negative relationship between monetary and non-monetary rewards as the rent variable attaches a

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[10] Hence, under the balanced condition, the average effort provided with and without respect from the employer is 7.56 (S.D. = 1.78) and 4.78 (S.D. = 3.17), respectively. The corresponding values are 8.68 (S.D. = 1.49) and 4.90 (S.D. = 3.65) in the excess demand condition, and 7.82 (S.D. = 2.29) and 3.71 (S.D. = 3.40) in the excess supply condition.

negative coefficient. This suggests some degree of substitutability between rent or wage and symbolic rewards in this condition.[11]   In the excess demand treatment, such a trade-off between monetary and non-monetary rewards does not exist probably because firms face a higher risk of not being able to hire any worker. In the excess supply condition, firms can offer lower rents on average due to the competition between employees and therefore they have less pressure to substitute monetary and non-monetary rewards. When the market is unbalanced, the number of thumbs depends negatively on the length of the relationship. It suggests that once a relational contract has been established in such adversarial conditions, firms do not want to sacrifice money any longer either because their profits are lower (excess demand condition) or because they have a stronger bargaining power (excess supply condition) than when the market is balanced.

Finally, as can be seen from the first column, controlling for the level of the rent and the effort provided by the employee, firms give marginally more thumbs than in the baseline when confronted with excess supply of labor. Moreover, employees are more willing to exert more effort for the same rent offered in order to stay in the same firm and employers praise their employees for their higher effort levels.[12]   It may be also the case that firms feel advantageous inequality aversion in terms of bargaining power and use symbolic rewards also for this reason. Firms do not distribute more symbolic rewards when it is more difficult to recruit employees. This could be due to the fact that when firms have to compete to recruit, employees exert on average a lower effort level for the same rent offered (see Table

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[11]   The regressions deliver the same conclusions when wage is used instead of the rent variable.

[12]   The average duration of contracts in the respect treatment is also slightly longer under excess supply (1.80 period) than under both the balanced condition (1.56) and the excess demand condition (1.40).

A in Appendix).   In any event, this suggests that firms do not use symbolic rewards strategically.

We now turn to the employer's decision to make a private offer to the same employee. In particular, we investigate whether paying respect is associated with the employers' willingness to keep the same employee in the next period. We estimate two random-effects probit models in which the dependent variable is the probability for an employer to make a private offer to the same employee as in the previous period. The independent variables include the private nature of the contract, the effort provided by the employee and the difference between the actual and the desired levels of effort in the previous period. When appropriate, we also include the number of thumbs given by the employer to her employee in the previous period. We control for period, labor market condition and gender. The first model considers the baseline and the second one the respect treatment. Table 3 displays the results of these regressions.

Table 3 Determinants of the employer's probability to make a private offer to same employee as in the previous period (random-effects probit models)

Treatment	Baseline (1)	Respect (2)
Effort in t-1	0.087*** (0.024)	0.104*** (0.016)
Difference between actual and desired effort in t-1	0.006 (0.026)	- 0.006 (0.017)
Private contract in t-1	0.250*** (0.093)	0.139** (0.070)
Nb thumbs given in t-1	-	0.072** (0.029)
Excess demand	-0.322** (0.145)	0.076 (0.083)
Excess supply	0.102 (0.181)	0.176** (0.088)
Period	0.001 (0.013)	0.030*** (0.010)
Male employer	-0.018 (0.149)	-0.157** (0.073)
N	268	568
Log likelihood	-126.684	-222.195
Wald Chi2	53.04	177.84
p>chi2	0.000	0.000

Note: The table reports the marginal effects and standard errors of the marginal effects are in parentheses. *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

We saw earlier that the probability of giving thumbs is falling with the duration of the contract. However, as can be seen from Table 3, controlling for effort, symbolic rewards are associated with a higher probability of making a private offer to the same employee in the next period. Each thumb assigned increases the probability of an offer made to the same employee by 7.2% (significant at the 1.2% level). Thus, by paying respect employers signal their willingness to build relational contracts. In the baseline treatment, , the employers are less likely to propose a private offer to the same employee under the excess demand condition, presumably because employees are less reciprocal in terms of effort in the case of strong competition between firms. They rather make more public offers to be more visible to employees on the market. The opposite is observed in the respect treatment for the excess supply condition, because the risk of unemployment "disciplines" employees. The time trend is significant only in the respect treatment, which suggests that the possibility to provide thumbs helps firms in learning to build relational contracts over time.

Let us next consider how employees respond to the receipt of symbolic rewards. To understand the employee's willingness to continue the employment relationship, we estimate two models. We estimate the determinants of the employee's probability of working in the same firm as in the previous period by means of a random-effects probit model, irrespective of whether or not the previous firm has made a private offer to this employee in the current period. This is shown in the first column in Table 4. The second column contains the estimates from a corresponding model for accepting a private offer from the same firm. In both models, the independent variables include the characteristics of the employment relationship in the previous period (reception of thumbs, rent, private contract, difference between the desired and actual effort level, length of the relationship). We also control for

the market conditions (with the balanced market as the reference category), the period, and

the employee's gender.

Table 4. Determinants of the employee's willingness to continue the employment
relationship (random-effects probit models)

Independent variables	Probability of working in the same firm as in t-1 (1)	Probability of accepting a private offer from same firm (2)
Nb thumbs received in t-1	0.075*** (0.026)	0.040** (0.016)
Rent in t-1	-0.003 (0.003)	0.001 (0.001)
Private contract in t-1	0.217*** (0.062)	0.019 (0.051)
Difference between actual and desired effort in t-1	-0.055*** (0.013)	-0.025** (0.013)
Length relationship in t-1	0.115*** (0.025)	0.059*** (0.012)
Excess demand	-0.055 (0.075)	-0.156** (0.078)
Excess supply	0.191*** (0.069)	0.022 (0.042)
Period	0.005 (0.012)	0.001 (0.006)
Gender of the employee	-0.045 (0.057)	0.002 (0.036)
N	513	252
Log Likelihood	-222.070	-79.167
Wald chi2	171.17	47.17
Prob >chi2	0.000	0.000

Note: The table reports the marginal effects and standard errors of the marginal effects are in parentheses. **
and *** indicate statistical significance at the 0.05 and 0.01 level, respectively.

Four findings are worth noting. First, each thumb received from the same firm in the

previous period increases by 7.5% the likelihood that the employee chooses to work in the

same firm in the subsequent period, while the rent has no significant impact. Similarly,

having received symbolic rewards increases the willingness of employees to accept a private

offer from the same firm. Second, both probabilities are increasing in the duration of the

relationship, which supports the notion of relational contracts. Third, the larger the

difference between the desired and the actual level of effort in the previous period, the less

likely the employee is willing to work in the same firm even when he receives an offer from

it. Fourth, employees are more likely to work with the same firm when there is

unemployment (model (1))[13] and less likely to accept an offer from the same firm in the excess demand condition (model (2)), probably because of the competition between firms.

Another employee response of interest is the change in his level of effort subsequent on the receipt of symbolic rewards. Table 5 analyzes the determinants of the change in the level of effort in two consecutive periods when the employee works for the same firm, by means of random-effects GLS models. To account for the possibility of a non-linear effect of the receipt of thumbs, model (1) only considers the relationships that last less than four periods and model (2) those that last longer. The independent variables are the usual ones. The private nature of the contract is not included in the second model because all contracts that last longer than three periods in the respect treatment are private.

Table 5. Determinants of the change in effort between t-1 and t, by length of relationship (random-effects GLS models)

Dependent variable: Variation of effort between t-1 and t	Current length of the relationship	
	2-3 (1)	≥ 4 (2)
Receipt of thumbs in t-1	0.652* (0.363)	-0.723 (0.451)
Rent in t	0.002 (0.015)	0.029 (0.024)
Variation rent between t-1 and t	0.081*** (0.024)	0 .177*** (0.033)
Private contract	-0.100 (0.531)	-
Excess Demand	-0.898* (0.504)	-0.103 (0.687)
Excess supply	-0.231 (0.408)	-0.814 (0.552)
Period	0.051 (0.059)	-0.247*** (0.082)
Gender	0.559 (0.367)	0.535 (0.495)
Constant	-1.233 (0.962)	0.380 (1.594)
N	115	109
R^2	0.220	0.437
Wald chi2	30.47	69.99
Prob >chi2	0.000	0.000

Note: Standard errors are in parentheses. * and *** indicate statistical significance at the 0.10 and 0.01 level, respectively.

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[13] This finding is consistent with the observation that the average duration of employment relationships is the highest in this market condition. See Table A in Appendix.

Controlling for the rent offered and its evolution over time, model (1) shows that receipt of symbolic rewards in the previous period motivates the employee to increase his level of effort. Note that the coefficient of the variable is relatively big (0.652). This finding supports the hypothesis that the expression of respect by the principal can be considered as an incentive. Model (2) indicates, however, that this incentive effect vanishes in longer-term relationships. An interpretation is that once it becomes clear that relational contracts are established, employees are less sensitive to the expression of respect. This may be due to the short time duration of our laboratory experiment. Not surprisingly, these regressions also show that an increase of the rent offered by the same firm exerts a strong incentive effect whatever the current length of the relationship. Last, employees are less likely to increase their effort when there is excess demand in the labor market most likely because of their higher bargaining power. This effect is no longer significant when long-term relationships are established, that is, when relational contracts isolate contractors from the market environment.

4.3. Is paying respect profitable and efficient?

Having shown that firms make private offers and provide symbolic rewards in response to high levels of effort from the employee and that employees are both more willing to stay with an employer that shows respect and to provide more effort (when symbolic rewards are given early), we finish off with looking at the profitability and efficiency of providing symbolic rewards. We find two pieces of evidence that paying respect is indeed profitable to employers in the balanced market condition. First, as can be seen from model (1) in Table 6, profits are marginally higher in the respect treatment as compared to the baseline. This derives from the fact that, controlling for the rent, the private nature of the contract and the

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length of the relationship, the employees' actual level of effort is marginally higher in this treatment.[14] Second, in the respect treatment, for continuing relationships, paying respect by giving thumbs is followed by an increase in profits in the next period as a consequence of an increase in the level of effort of employees (as shown by Table 5); see model (2) in Table 6.

Table 6. Determinants of the profit and its variation between t-1 and t, Balanced condition (random-effect GLS)

Independent variables	Profit Pooled treatments (1)	Variation of profit between t-1 and t when same employee – Respect treatment (2)
Respect treatment	4.912* (2.817)	-
Rent	0.155 (0.117)	-
Variation of rent	-	0.534** (0.223)
Gave thumbs in t-1	-	5.866* (3.568)
Private contract	17.660*** (2.643)	-17.590* (6.333)
Length relationship	1.763*** (0.581)	-0.006 (0.731)
Gender	-2.228 (2.694)	-2.365 (4.109)
Constant	-3.926 (6.003)	14.251 (9.665)
N	348	85
R^2	0.280	0.169
Wald chi2	113.86	16.43
Prob >chi2	0.000	0.006

Note: Standard errors are in parentheses. *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

However, the overall effect of the provision of symbolic rewards is not as beneficial as it could be. First, Table 6 has shown that its effect on profits is marginally significant when the market is balanced. Second, the same regressions for the other labor market conditions (not reported here but available upon request) fail finding a significant impact of paying respect on profits. Last, as shown by non-parametric statistics in Table A in Appendix, the average rent is lower in the respect treatment than in the baseline (except when there is excess supply). As a consequence, although receipt of symbolic rewards motivates the

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[14] This is confirmed by a random-effects tobit model in which the dependent variable is the actual level of effort (not reported but available upon request). The respect treatment variable receives a significant and positive coefficient of 0.746 (standard error $= 0.453$, $p = 0.100$).

employees to work harder in relational contracts, average efficiency (as measured by the sum of firm's and employee's payoffs) is not significantly improved in the respect treatment (and is even decreased in the excess demand condition).[15]

5. DISCUSSION AND CONCLUSION

Our repeated three-stage gift exchange game delivers some notable findings regarding the use of costly symbolic rewards as a means of showing respect to employees and the consequences thereof. We find that a sizable fraction of our firm-subjects make use of the opportunity to give costly symbolic rewards to their employees although the employment relationship is terminated at the end of each period. Respect is expressed as a response to the employee's higher effort. In this sense, it is backward-looking. But it is also forward-looking as the firms giving symbolic rewards are more likely to make a private offer to the same employee in the next period aiming at hiring him again. Furthermore, controlling for the rent offered in the previous period, employees are more willing to accept a job offer from the same employer when the employer paid respect to him in previous periods. Therefore, symbolic rewards contribute actively to the establishment of relational contracts. However, it should be noted that they become used less once it is clear that the relational contract is established. Employees are also more willing to increase their effort further when they have received symbolic rewards and when they stay in the same firm. As a consequence, we also find that expressing respect by means of costly symbolic rewards is profitable for the employers when the market is balanced.

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[15] Mann-Whitney tests, with each individual as a unit of observation, conclude that the rent is lower in the respect treatment than in the Baseline when the market is balanced ($p = 0.007$) and when there is excess demand ($p < 0.001$), but not when there is excess supply of labor ($p = 0.298$). The same tests show that efficiency is similar in both treatments when the market is balanced ($p = 0.538$) and when there is excess supply ($p = 0.270$), but it is lower when there is excess demand ($p = 0.002$).

These findings show that a fraction of individuals like to be praised for their efforts and that non-monetary rewards constitute another incentive device that moreover supports the establishment of relational contracts. Symbolic rewards are an example of (implicit) relational incentives that mitigate the agency problem by nurturing identity and self-image. If employees value the expression of respect because they want to earn social esteem, they do not expect only a fair wage from their employer but also some praise for their efforts; they may even accept a lower rent in exchange for signs of recognition. Although we need to be careful in extrapolating our findings to real settings, this could indicate that firms that are willing to attract these employees should design their jobs and human resources policies in such a way that this source of motivation can be fully exploited.

If a proportion of the firms give symbolic rewards to their employees, is this behavior strategic? Yes and no. On the one hand we find that compared with a balanced market, more respect is expressed when there is excess supply in the market but not when there is excess demand. If symbolic rewards were mainly used strategically for coping with unbalanced competition on the market, we should observe that controlling for rents and the level of effort, firms pay less respect when there is unemployment and because it consequently is easier to find workers, and that they pay more respect when they have to compete harder to recruit employees. Notably, our results indicate that employers use symbolic rewards chiefly to express their approval of the effort put forth by the employee. On the other hand, there are indications of (weak) substitution between *ex post* symbolic rewards and *ex ante* monetary rewards.

Moreover, a puzzling finding of our study is that when firms have the opportunity to express respect to their employees, overall efficiency (measured as the sum of employers' and employees' payoffs) is not improved (and is even decreased when there is excess demand in the labor market). Overall, when firms have the opportunity to use symbolic rewards, the mean rent offered to the employees is significantly lower and the length of the employment relationships is not increased. This suggests that the introduction of this opportunity has a general depressing effect on the monetary rewards offered in the market. Firms that pay respect tend to substitute relational incentives to extrinsic rewards and this also lowers the wages offered by the other firms on the market. As paying respect contributes to match reciprocal workers to those firms who pay respect, an additional finding is that the expression of respect also contributes to a higher segmentation in the labor market. Controlling for the rents offered, the firms that do not pay respect are less able to retain reciprocal employees who expect more than a fair wage in this environment since firms have two instruments to express their good intentions. This could explain why the average duration of contracts is not increased in an environment where respect can be expressed. Therefore, respect does not only act as an incentive but it also contributes to sorting employees.

We have shown in this paper that paying respect matters in dealing with agency problems, providing support to the hypotheses developed in Ellingsen and Johannesson (2007a, 2008). Of course, in real settings the respect expressed by co-workers also matters while we have only focused here on employer-employee relationships. Clearly, further research is needed to understand the interplay of relational incentives and extrinsic rewards both in bilateral and collective interactions.

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Appendix A.

Table A. Summary statistics

Market condition	Balanced market		Excess demand		Excess supply	
Treatment	Baseline	Respect	Baseline	Respect	Baseline	Respect
% private contracts	64.29	56.78^{ns}	41.38	57.29^{ns}	81.25	60.21*
	(48.13)	(49.64)	(49.54)	(49.59)	(39.24)	(49.08)
Wage	47.61	38.34**	75.38	53.91**	39.68	34.04^{ns}
	(13.18)	(14.91)	(7.21)	(17.24)	(20.45)	(20.05)
Desired effort	8.49	8.02^{ns}	9.47	8.52**	7.17	7.37^{ns}
	(1.96)	(2.23)	(1.26)	(2.14)	(2.92)	(2.73)
Rent	33.49	25.37***	58.79	39.65***	28.36	22.37^{ns}
	(10.70)	(11.74)	(6.60)	(15.16)	(15.34)	(16.16)
Actual effort	6.24	5.43^{ns}	7.56	5.69***	6.08	4.89^{ns}
	(3.68)	(3.16)	(3.05)	(3.66)	(3.55)	(3.63)
Profit	14.80	15.52^{ns}	0.25	2.47^{ns}	21.16	14.18^{ns}
	(30.23)	(21.24)	(30.05)	(28.79)	(19.42)	(26.87)
Employee's payoffs	37.85	30.67***	63.10	45.35***	30.36	27.07^{ns}
	(9.96)	(10.61)	(8.42)	(14.09)	(14.34)	(16.24)
Efficiency	52.65	46.19^{ns}	63.35	47.82***	51.52	41.25^{ns}
	(29.32)	(25.01)	(24.41)	(28.95)	(28.25)	(28.65)
% contracts with thumbs	-	23.31	-	20.83	-	28.80
		(42.37)		(40.72)		(45.40)
Nb thumbs	-	0.46	-	0.50	-	0.69
		(0.99)		(1.17)		(1.32)
Nb thumbs if thumbs>0	-	1.98	-	2.40	-	2.38
		(1.11)		(1.43)		(1.41)
Average total length	1.84	1.56^{ns}	1.30	1.40^{ns}	1.98	1.80^{ns}
	(2.25)	(1.71)	(0.72)	(1.48)	(2.52)	(1.92)
Nb obs.	120	240	144	288	96	192
Nb contracts	112	236	87	192	96	191
% contracts	93.52	98.33	60.42	66.67	100	99.48

Note: Standard deviations are in parentheses. Only accepted contracts are considered. This table also indicates for each variable and each market condition the degree of significance of comparisons between the baseline treatment and the respect treatment, with *, **, and *** indicating statistical significance at the 0.10, 0.05, and 0.01 level, respectively, and with ^{ns} for non-significance. These indicators are based on Mann-Whitney tests, with each individual as a unit of observation.

Appendix B. Instructions for the balanced respect treatment (other instructions are available upon request)

We thank you for participating in this experiment. At the beginning of this session, you will receive an initial endowment of 5 Euros. During the course of this experiment, you can earn a further amount of money by accumulating points. The amount of points that you gain during the experiment depends on your decisions and the decisions of other participants. All the points that your will earn during the 12 periods of this experiment will be summed and exchanged into Euros at the end of the experiment according to the exchange rate of :

100 points = 4 Euros

At the end of the experiment, you will receive the amount that you earned during this experiment in addition to your initial endowment. Your earnings will be paid in cash in a separate room.

There are two roles in this experiment: there are employers and employees. The role of each participant is randomly allocated at the beginning of the experiment and each will keep the same role during the whole experiment. **The number of employers is the same as the number of employees.**

All participants have received an identification number which they will keep for the entire experiment. You will find your number on your screen.

Overview of each period

In each period, every employer can recruit one employee. The procedures are as follows.

1. Each period starts with a trading phase which lasts 3 minutes. During this phase, employers can submit contract offers which can be accepted by employees. When submitting an offer, the employer has to specify three things:

- which wage he offers
- which quality of work he desires
- and whether he wants to submit public offers to all employees or private offers to specific employees only.

Offers can be accepted by employees at any time during the trading phase.

2. Following the trading phase, each employee who has concluded a trade chooses the actual quality of his work.

3. After being informed on the quality of work chosen by his employee, the employer can decide to express his approval to his employee by means of signs of approval.

4. Lastly, each participant's earnings in the current period are determined.

Description of each stage

1. The trading phase on the market

Each period starts with a trading phase that lasts a maximum of 3 minutes. During this stage, each employer can conclude a contract with an employee. In order to do so, he can submit as many offers as he wishes.

Each employer can see the following screen:

Each employee can see the following screen:

Période: 3/12 Temps: 140 secondes

Vous êtes l'employé 1

Offres publiques		
Employeur	Salaire	Qualité

Offres privées		
Employeur	Salaire	Qualité

Historique								
Période	Employeur	Offre	Salaire	Qualité désirée	Qualité effective	Pouce	Votre gain	Gain de l'autre
1	-	-	-	-	-	-	0	-
2	-	-	-	-	-	-	0	-

J'accepte   J'accepte
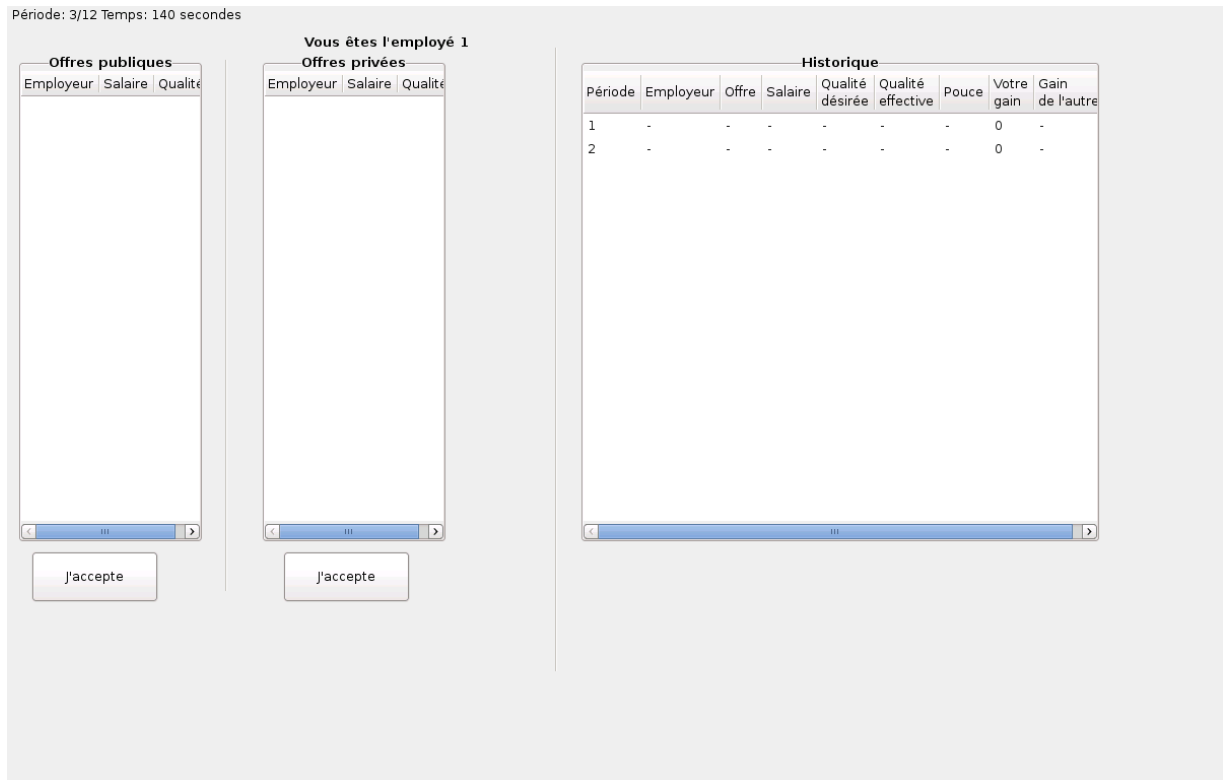
In the top left corner of the screen, you can see the number of the current period and the time remaining in this trading phase before the market closes.

<u>How to submit an offer?</u>
To submit an offer, the employer must indicate three elements on the left of the screen:

   a) First, the employer specifies whether he wants to submit a private or a public offer.

- Public offers
The public offers are communicated to all participants in the market. All employees see all public offers on their screens. A public offer can be accepted by any employee. An employer can also see all the public offers submitted by all employers.

To submit a public offer, the employer has to click on the « public offer » field.

- Private offers
A private offer is submitted by an employer to one employee only. Only this employee is informed about the offer and only this employee can accept the offer. No other employer or employee will be informed about that offer.

To submit a private offer, the employer must click on the « private offer » field. After that he specifies the identification number of the employee he wants to submit an offer to. Each employee keeps his identification number throughout the whole experiment.

   b) Once the employer has specified to whom he wants to submit an offer, he determines which wage he offers. This wage can take any value between 0 and 100.

   c) Finally, the employer determines the quality of work he desires. The quality of work can take any value between 1 and 10.

After the offer is completely specified, the employer clicks on the « validate » button. As long as the button is not clicked, the offer can be modified. After the employer has validated his offer, the offer is displayed in bold in the list of offers available on the market.

Each employer can submit **as many public and private offers as he wishes** during each period as long as there are employees available in the market. In the middle of the employer's screens the identification numbers of the remaining employees are kept visible.

All the public offers in the current trading phase are displayed on the left side of the employer's and employee's screens. It is possible to see which employer has submitted an offer, which wage he has offered, which quality of work he desires. All the employers have also an identification number that they keep throughout the whole experiment.

The private offers are displayed in the middle of the screen. It is possible to see on the employer's screen which private offers he has submitted to specific employees, with their identification numbers, which wage he has offered, and which quality of work he desires. One can see on the employee's screen which private offers he has been personally submitted in the current period, specifying the employers' identification numbers, the wage offered and the desired quality of work.

How accept an offer?

On the left of their screen, the employees can see the remaining public offers and the private offers they have received personally. To accept an offer, the employee must click on the row in which the offer is displayed to highlight it, and then click on the button « I accept » to validate his choice. Each offer can be accepted any time during the trading phase, after the first 20 seconds following the market opening.

In any given period, each employer and each employee can conclude at most one contract. Therefore, as soon as one of his offers has been accepted, all the other offers submitted by this employer are automatically cancelled. This employer is no longer allowed to submit other offers. The employer is informed on his offer that has been accepted and on the identification number of the employee who has accepted this offer.

After 3 minutes have elapsed, the trading phase is over even if all the employers and all the employees have not concluded a contract. If all the employees have concluded a contract before 3 minutes, the trading phase is shortened.

2. Determination of work quality

Following the trading phase, the employees who have concluded a contract choose which quality of work they supply to their respective employer. The quality chosen by the employee can differ from the quality desired by the employer.

The quality of work has to be between 1 and 10. Each quality level is associated to a cost. The higher the quality, the higher the cost to the employee, and the higher the employer's earnings (before deduction of wage), as indicated in the following Table:

Quality of work	1	2	3	4	5	6	7	8	9	10
Cost for the employee	0	1	2	4	6	8	10	12	15	18
Gain of the employer before deduction of wage	10	20	30	40	50	60	70	80	90	100

The employer is informed on the quality of work actually supplied by his employee. No other employer or employee will be informed about that decision.

3. Distribution of approval signs

After being informed on the quality of work actually supplied by their employee, the employers have the

possibility to express their approval to their employee by addressing him approval signs. These approval signs are represented by raised thumbs, as indicated in the following screenshot:

The employer can send between 0 and 5 thumbs to his employee. The employee is informed on the number of thumbs sent by his employer.

Receiving thumbs does not affect the employee's payoff. They only aim at expressing the employer's approval.

Each thumb addressed to an employee costs 1 point to the employer. The employer must enter a value between 0 and 5 and validate his decision.

4. Calculation of payoffs

- The employer's payoff in a given period:

• If the employer has not concluded a trade, the employer receives a payoff of 0 point.

• If the employer has concluded a trade, his payoff depends on the wage he has offered, the quality supplied by the employee and the number of approval signs sent to the employee. The employer's payoff is therefore determined as follows:

Employer's payoff = (10 * quality of work) - wage – cost of thumbs

- The employee's payoff in a given period:

• If the employee has not concluded a trade, the employee receives a payoff of 5 points.

• If the employee has concluded a trade, his payoff is equal to the wage he has received minus the cost of the quality of work supplied. The employee's payoff is therefore determined as follows:

Employee's payoff = wage - cost of the quality of work supplied

Note that it may happen that employers and employees can suffer losses in a given period. If any, the losses will be deducted from your initial endowment of 5 Euros or from the gains realized in the other periods.

Every one is informed of his own payoff and of the partner's payoff at the end of the current period.

5. End of the period

A summary table appears on your screen and the screen of the participant you have concluded a contract with, with the following information:

• the identification number of the employer or the employee
• the accepted wage
• the quality of work desired by the employer
• the quality of work supplied by the employee
• the number of thumbs sent by the employer to his employee
• your earnings for the current period
• the earnings of your partner for the current period, if any.

A new period starts automatically.

6. Supplementary indicative question

At the beginning of each period, each employee can see an indicative question on this screen. He must indicate if he is indifferent between all the employers or if he would prefer to receive a private offer from a specific employer. In this case, he has to indicate the identification number of this employer.

The answer to this question is purely **indicative** and it is communicated to none of the other participants, neither the employers, nor the employees. It has no influence on the offers received or on the payoffs.

To become familiar with the rules of this experiment, we invite you to read these instructions again and to answer the questions that will be displayed on your screen.

Next, you will perform **3 trials of the trading phase** only (i.e., without choosing the quality of work to supply nor the approval signs). During these trials no money can be earned. For these trials you will be assigned a provisional identification number.

Following the 3 trials, the 12 periods that compose this experiment will start. The definitive identification numbers will be assigned for the rest of the experiment.

Please note that communication between participants is strictly prohibited during the experiment. Communication will lead to the exclusion from the experiment. In case you have any question, do not hesitate to raise your hand and we will answer your question in private.

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