



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

ARCHIVIO ISTITUZIONALE DELLA RICERCA

Alma Mater Studiorum Università di Bologna Archivio istituzionale della ricerca

The gift of being chosen

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Availability:

This version is available at: <https://hdl.handle.net/11585/580796> since: 2022-02-23

Published:

DOI: <http://doi.org/10.1007/s10683-015-9449-9>

Terms of use:

Some rights reserved. The terms and conditions for the reuse of this version of the manuscript are specified in the publishing policy. For all terms of use and more information see the publisher's website.

This item was downloaded from IRIS Università di Bologna (<https://cris.unibo.it/>).
When citing, please refer to the published version.

(Article begins on next page)

This is the final peer-reviewed accepted manuscript of:

Montinari, N., Nicolò, A., & Oexl, R. (2016). The gift of being chosen. *Experimental Economics*, 19(2), 460-479.

The final published version is available online at:

<https://doi.org/10.1007/s10683-015-9449-9>

Rights / License:

The terms and conditions for the reuse of this version of the manuscript are specified in the publishing policy. For all terms of use and more information see the publisher's website.

This item was downloaded from IRIS Università di Bologna (<https://cris.unibo.it/>)

When citing, please refer to the published version.

The Gift of Being Chosen

Natalia Montinari · Antonio Nicolò ·
Regine Oexl

Received: date / Accepted: date

Abstract We report evidence from an experiment where an employer selects one of two workers to perform a task for a fixed compensation. Workers differ in their ability. The employer's payoff depends on the worker's ability and on a non-contractible effort that the worker exerts once employed. We find that selected workers exert an effort higher than the minimum enforceable one. When the employers can send a free-text form message to the selected worker, workers with low ability exert significantly higher effort than the workers with high ability. The difference in effort overcompensates the difference in ability.

1 Introduction

The gift-exchange hypothesis is one of the central themes of behavioral contract theory. It asserts that an employer could find it profitable to offer a compensation higher than the market clearing wage (i.e., a 'fair' or 'kind' wage) to trigger a reciprocal effort by a worker. Originally formulated by Akerlof (1982), this theory has generated an extensive theoretical and experimental

Natalia Montinari
Lund University,
Department of Economics,
Tycho Brahes vag, 1,
22363 Lund, Sweden

Antonio Nicolò
University of Manchester,
School of Social Sciences,
Arthur Lewis Building,
Manchester M13 9PL, UK

Regine Oexl
University of Innsbruck
Universitätsstr. 15
6020 Innsbruck, Austria
E-mail: regine.oexl@uibk.ac.at

literature that analyzes the relation between the level of workers' compensation and their productivity.¹ Thereby, research has focused on the employer-worker relation once the worker has been selected, when the decision of the employer only regards the level of compensation to offer. Recently, James N. Baron contributed to the debate on reciprocity and gift exchange, formulating the notion of 'empathy wage'. Baron (2013) documents that a gift offered by the employer to the worker is likely to elicit more gratitude among workers who are relatively disadvantaged and in the lower part of the performance distribution (defined as 'non-stars'). Baron evidences how, in some cases, the magnitude of the difference in gratitude between the star and non-star workers is sufficiently large that it offsets the difference in productivity, suggesting an economic convenience of hiring non-star versus star workers.

In this paper, we aim to extend the literature on reciprocity and gratitude by investigating the selection phase of a job relation. Specifically, we study whether the choice of one worker over another influences the effort decision of the selected worker by eliciting gratitude. In fact, most job offers do not only include a certain scope of action for the employer to decide about the wage level, but they also include a stage in which the worker is chosen among a set of candidates and is informed about the employer's expectations. We provide experimental evidence supporting the hypothesis that a competitive selection phase can motivate the (chosen) worker to exert a level of costly effort larger than the minimum enforceable one. We also show that, when the employer can send a message to the selected worker, the notion of 'empathy wage' can explain our evidence. The low ability workers exert significantly higher effort than the high ability ones. Their effort choice overcompensates the difference in ability, translating into higher profits for the employers.

In order to focus on the worker's gratitude in the selection stage we design a simple experiment where an employer selects a worker among a set of candidates offering a fixed flat wage. The candidates differ in the level of observable ability, and the employer's payoff positively depends on both the ability and the effort exerted by the selected worker, once hired. In this setting, the gift received by the worker is 'being chosen by the employer', so we expect the hired workers to exert effort in order to express their gratitude. According to the 'empathy wage' notion, low ability workers should express more gratitude than high ability ones. The rationale supporting this prediction relies on the psychological theory of counter-factual thinking: workers' gratitude is also affected by their status in relation to other workers and by an assessment of how much worse, or better, things might have turned out. Finally, when the employer can communicate his intentions to the hired worker, we expect that she is able to reinforce the worker's gratitude and induce higher effort provision.

¹ For reviews, see Charness and Kuhn (2011), Fehr et al. (2009), or Gächter and Fehr (2002).

We compare three main treatments. In the first two, the ‘No Communication Treatment’ and the ‘Communication Treatment’, the employer selects one worker out of two for a chosen effort task. In the Communication Treatment, simultaneously to the selection, the employer can send a free-form text message to the chosen candidate. In the third treatment, denoted ‘Random Device Treatment’, the worker is selected via a random device.

Average effort exerted by workers is statistically different than the minimum enforceable level in all treatments. When looking at effort exertion depending on workers’ abilities, in both the No Communication Treatment and the Random Device Treatment the average effort exerted is not significantly different both within and between treatments. When communication is allowed, workers with low ability exert, on average, a significantly higher effort than i) workers with high ability in the Communication Treatment and ii) workers (with high and low ability) in the No Communication Treatment and in the Random Device Treatment. High ability workers exert, on average, the same effort in all treatments.

In line with Baron (2013), our results evidence that choosing the worker who has the greater ability is not always the best choice for the employer. Even though in our setting the differences in ability among the workers are small, once we include communication, the effect on the profit of the employers is remarkable: when a low ability worker is hired, profits are on average 41% higher compared to the case in which a high ability worker is hired. When analyzing the content of the messages sent, we find that most messages contain a suggestion of an effort level and refer to some kind of fairness. By means of a control treatment denoted ‘Suggestion Treatment’ (where simultaneously to the selection, the employer is allowed to send a numerical suggestion to the chosen candidate, without additional words), we show that the increase in effort is not mainly driven by facilitated coordination or signaling of the employer’s expectation, but by a positive effect on low ability worker’s motivation.

Our experiment does not conclusively answer the question of which behavioral motivation induces low ability workers to exert more effort than high ability workers. Results are consistent with reciprocity when looking at the Communication Treatment. However, the average effort exerted does not differ depending on the hired workers’ ability when comparing the Random Device Treatment to the No Communication Treatment. Alternative theories, such as guilt aversion (Charness and Dufwenberg, 2006) or social esteem (Ellingsen and Johannesson, 2008) may explain our results, yet our experiment was not designed to test these theories against each other. We test in a simple laboratory experiment the ‘empathy wage’ theory, and show that, once selected, low ability workers do actually respond with a significantly higher effort than high ability ones, but only when employers can make their choice salient through communication. Communication is present in almost all real-life interactions resembled by our experiment. Therefore, behavioral responses may be underestimated in studies that focus only on the possibility for the employer to

choose the wage level but not which worker to hire and do not include, or limit, the possibility of communication between parties.

Our paper contributes to the experimental literature that investigates the role of communication. Communication has been shown to foster both efficiency and pro-social behavior in many different games. In public good games, communication reduces free-riding behavior, increasing voluntary contributions (Isaac and Walker, 1988; Koukoumelis et al., 2012). In commons dilemma situations, it helps in having a more effective sanctioning system (Dawes et al., 1977; Ostrom et al., 1992), and in coordination games it facilitates coordination (Cooper et al., 1992; Blume and Ortmann, 2007; Brandts and Cooper, 2007). In ultimatum games, the possibility for a second mover to send a reply to the proposer in which she can express her emotions lowers the rate of unfair offers that are rejected (Xiao and Houser, 2005). In trust games, one-way communication from second movers to first movers increases the level of trust (Charness and Dufwenberg, 2006): when second movers may signal their intentions before the trust game starts, their promises enhance trustworthy behavior. In gift exchange games, one-way communication from employees to managers promotes reciprocal behavior, because employees advise managers to set higher wages that eventually increase managers' payoffs, too (Cooper and Lightle, 2013). In our experiment, one-way communication goes in the other direction, from employers to employees: employers hire an employee at a fixed wage and simultaneously can send a message. Messages therefore can be used to make explicit employers' expectations regarding employees' behavior, and motivate employees to exert more effort, fostering their gratitude for being chosen.

Finally, our work provides an alternative explanation for the hiring of candidates who have a lower ability than others. Up to now, this issue has been investigated by placing a focus on the economic origins and consequences of favoritism in groups (Bramoulle and Goyal, 2011), on subjective evaluations and their consequences (Prendergast and Topel, 1996), or on nepotism (Levine et al., 2010). However, while research on nepotism and favoritism considers the choice of workers who have a low ability as leading to inefficiency in organizations, our analysis provides a different perspective: our experimental evidence identifies situations where it is beneficial to the employer to hire a worker with lower ability than others available.

The rest of the paper is organized as follows. Section 2 describes our experimental design. Section 3 clarifies our predictions. Section 4 illustrates our procedures. Section 5 presents our main results. Section 6 concludes.

2 Experimental design

We consider a game of complete information where an employer has to select one employee out of two candidates, workers 1 and 2. The employer chooses

a worker and uses all her endowment to pay a fixed wage of 50 ECUs to the selected worker.² The selected worker decides an effort level by choosing a discrete integer in the interval $e = 1, 2, \dots, 10$. Effort is costly, with the cost of effort $c(e)$ being strictly increasing in the level of exerted effort (we use the same cost function as in Fehr et al., 1998). All workers experience the same cost of effort, but they have different abilities. Denote w^k , with $k = L, H$ the worker with ability θ^k ; we assume $\theta^H = 0.5$ and $\theta^L = 0$. The monetary payoff of the employer who hires a worker of ability k is $5(e + \theta^k)$. It therefore depends positively both on the worker's ability and effort provided. The chosen worker receives a monetary payoff equal to $m = 50 - c(e)$. If the selected worker does not accept the employer's offer, then the game ends and both he and the employer receive 0 ECUs.³ The candidate who is not selected receives an unemployment benefit of 10 ECUs. Effort levels, relative costs and earnings of the employer and the workers are depicted in Table 1.

Table 1: Costs of effort $c(e)$, earnings of the worker m and earnings of the employer in case she hires a high ability, $\pi(w^H)$ and a low ability worker $\pi(w^L)$, for each level of effort e .

e	1	2	3	4	5	6	7	8	9	10
$c(e)$	0	1	2	4	6	8	10	12	15	18
m	50	49	48	46	44	42	40	38	35	32
$\pi(w^H)$	7.5	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5	52.5
$\pi(w^L)$	5	10	15	20	25	30	35	40	45	50

Note that, given the choice of our parameters, an employer finds it profitable to hire a low ability worker only if she expects that he exerts an effort at least one level greater than the high ability worker's effort.

We run four treatments. In the Random Device Treatment (RDT), a random device selects one worker to be hired. In the No Communication Treatment (NCT) and in the Communication Treatment (CT), the employer selects one worker to be hired. In the CT, when hiring the worker, the employer can send a free form message. The content of the message is not restricted, and it is public information that messages are non-binding and costless in the common sense.⁴ Finally, in the attempt to disentangle the effect of expectation and non-verbal communication, we run as control the Suggestion Treatment

² In most experiments studying gift exchange, employers can choose between different wage levels. Consequently reciprocity is identified as high (non-contractible) effort exerted by workers as response to high wage offered by the employers.

³ As in other experiments, we give workers the possibility of choosing the strictly dominated action of refusing the employer's proposal. None of our 210 workers chose it.

⁴ The only restriction imposed was that the employer could neither identify herself nor indicate anything that might happen after the experiment had ended (e.g., threaten the other group members, promise a side payment, etc.). All messages were screened before being sent, and all complied with these restrictions.

(ST). The ST is identical to the CT with the only exception that messages can only suggest a number representing the effort desired by the employer. In all treatments, first the worker learns that he has been selected (and in the CT and ST simultaneously reads the employer’s message / numerical suggestion) and then he chooses an effort.

3 Hypothesis

In this section, we briefly present the three hypotheses we aim to test with our experimental design.

Our first hypothesis predicts that the selection process produces gratitude toward the employer: workers’ reciprocal response toward the employer should be larger when the selection is made by the employer rather than by a random device.

Hypothesis 1 *In all treatments the workers’ selection triggers a provision of effort higher than the minimum enforceable one. Effort exerted in the RDT is lower than in the NCT and in the CT.*

The first part of this hypothesis is based on the predictions of distributional preferences models (see, e.g., Bolton and Ockenfels, 2000; Charness and Rabin, 2002; Fehr and Schmidt, 1999). In our experiment reciprocity cannot fully display since the employer since the wage is fixed. However, Charness (2004), shows that, in a standard gift exchange experiment, outcome based other regarding preferences affect workers’ effort choice. In our setting effort exertion above the minimum enforceable level is compatible both with inequality aversion and efficiency concerns.

The second part predicts that the employer’s intentions matter in explaining the effort choice of the worker; being chosen is a kind of gift which could induce some gratitude by the selected worker. So, if the intentions of the employer are relevant, then we should observe that the average effort exerted in the NCT and CT treatments is higher than the level exerted in the RDT (in a similar vein to Geanakoplos et al., 1989; Rabin, 1993; Dufwenberg and Kirchsteiger, 2004)

Our second hypothesis refers to the impact of workers’ ability on effort exertion:

Hypothesis 2 *In the NCT and the CT low ability workers exert more effort than high ability workers.*

This hypothesis is related to the ‘empathy wage’ notion formulated by Baron (2013): given the small but positive differences in abilities, high ability workers may feel more entitled to get the job than low ability candidates. Therefore, in both the NCT and the CT the same gift (i.e., being selected)

should arouse more gratitude by the workers who are relatively disadvantaged (i.e., the low ability workers) compared to the high ability workers. Moreover, choosing the low ability worker is a ‘riskier’ action for the employer; actually, this is the only way (given that the wage is fixed) for the employer to signal her kindness and, consequently, to induce higher reciprocal response by the worker (Levine, 1998; Ellingsen and Johannesson, 2008).

Our last hypothesis refers to the effect of communication:

Hypothesis 3 *When receiving a message from the employers, selected workers exert on average a higher effort compared to the NCT, where communication is not allowed.*

As in our experiment the kindness of the action of the employer in choosing the respective employee may not be sufficiently salient, we expect that communication helps in *clarifying* the intentions of the employer and, therefore, it may induce a higher effort exertion by the selected workers.

4 Procedures

The experiment was programmed in z-Tree (Fischbacher, 2007) and conducted at the experimental laboratory of the Max Planck Institute of Economics (Jena, Germany). The subjects were undergraduate students from the Friedrich Schiller University, Jena. They were recruited via the ORSEE software (Greiner, 2004). We conducted 22 sessions (see Table 2), featuring 210 groups with a total of 630 subjects, from November 2011 to July 2012. The sessions lasted about 50 minutes. Average payment was 9.88 Euros⁵ including the show-up fee.⁶

Table 2: Participants and treatments

Treatment	N groups	N participants
<i>Random Device</i>	40	120
<i>No Communication</i>	58	174
<i>Communication</i>	58	174
<i>Suggestion</i>	54	162
Total	210	630

Upon arriving at the laboratory, participants were randomly allocated to visually isolated computer terminals and given a paper copy of the instructions

⁵ During the experiment we referred to ECU rather than Euros, implementing the conversion rate 1 ECU = 0.1 Euros.

⁶ An English version of the instructions is reproduced in the Online Appendix. Full instructions and the software are available upon request.

that were read aloud to ensure common information.⁷ At the beginning of each session, each participant was randomly assigned a role and matched with two other participants to form a group of three. We referred to each group as a firm and to the group members as employer and low and high ability workers.

5 Results

In this section, we present our experimental results. We will first focus on the effort exertion irrespective of the workers' ability. Then we will look at the impact of ability. Finally we will focus on the impact of communication.

Our first result refers to the average effort exerted by the hired workers:

Result 1 *In all treatments, the average effort exerted by the selected workers is significantly higher than the minimum enforceable level. Average efforts in the NCT and RDT are not significantly different.*

Support for Result 1 can be found in Table 3 and Figure 1. In each treatment the average effort level is significantly higher than one, which is the minimum enforceable level, (Wilcoxon matched-pairs signed-ranks test, RDT: $z = 5.00$, $p < 0.01$; NCT $z = 6.28$, $p < 0.01$; CT: $z = 6.35$, $p < 0.01$).

The average effort exerted in the RDT and NCT is not significantly different (Wilcoxon-Mann-Whitney test (WMW henceforth): $z = 0.17$, $p = 0.87$). That is, we refuse the second part of hypothesis 1. Intention based reciprocity seems to play a minor role in explaining effort choice in our experiment. One possible explanation for this result is that⁸

Our second result summarizes our findings on the relation between effort exertion and workers' ability.

Result 2 *The low ability workers increase their effort in the CT compared to the NCT (and the RDT). The effort exerted by high ability workers is not significantly different across treatments.*

Communication has a significant impact on the behavior of low ability workers. Inspection of Table 3 reveals how the increase in average effort in the CT compared to the NCT is driven by the behavior of low ability workers. Hypothesis 2 is only confirmed in the presence of communication.

⁷ Participants were informed that the experiment consisted of two parts but they were informed about the content of part 2 only once part 1 was concluded. The second part of the experiment was unrelated to the game described in section 2.

⁸ This in line with previous research. Charness (2004) investigates different treatments where wages are chosen by an employer or by a random device and he shows that employees' behavior is identical when they receive a high wage, irrespective of who makes the decision. In a modified trust game Slonim and Garbarino (2008) find no difference in the percentage returned depending on the intentionality/randomness of the selection.

Table 3: Average effort exerted by the workers (st. dev.) and Wilcoxon-Mann-Whitney test comparisons.

	<i>RDT</i>	<i>NCT</i>	<i>CT</i>
$w^H + w^L$	4.00 (2.75)	3.98 (2.37)	5.29 (2.79)
w^H	3.76 (2.66)	4.13 (2.56)	4.54 (2.67)
w^L	4.17 (2.87)	3.70 (1.98)	7.12 (2.20)

WMW	<i>RDT vs NCT</i>	<i>RDT vs CT</i>	<i>CT vs NCT</i>
$w^H + w^L$	$z = 0.17, p = 0.87$	$z = 2.28, p = 0.02$	$z = 2.65, p < 0.01$
w^H	$z = 0.58, p = 0.56$	$z = 0.96, p = 0.34$	$z = 0.57, p = 0.57$
w^L	$z = 0.31, p = 0.76$	$z = 3.01, p < 0.00$	$z = 3.78, p < 0.01$

Fig. 1: Average effort of workers by treatment

The increase in the effort exerted by low ability workers strongly benefits employers who select them: on average, in the CT the employers who chose a low ability worker gained 41% more than employers who selected a high ability worker (35.59 ECUs versus 25.18 ECUs, WMW, $z = 2.55, p = 0.01$). Note, however, that this positive effect is not fully anticipated by employers, who do not increase the number of low ability workers hired in the CT compared to the NCT.⁹

5.1 Communication Content

In order to analyze whether the difference in the effort exerted by high and low ability workers in the CT can be due to the messages they received, in this section we focus on the content of the messages. We restrict our analysis to non-empty messages¹⁰ and identify two broad categories:

1. *Suggestion*: messages containing a) an explicit suggestion, i.e. a numerical suggestion of an effort choice, that can be either a single number or a range; or b) an implicit suggestion, i.e. a precise description of a behavior, that allows the worker to infer the request of a level/range of effort.
 - An example of a message containing an explicit suggestion is mess. No. 15 in Appendix A: “*I’m asking you to choose a job performance of 7. Then I’d receive 37.5 ECU and you 40 ECU. We’d both profit.*”

⁹ Employers hired 29% (17/58) and 34% (20/58) of low ability workers in the CT and NCT, respectively. These proportions are not significantly different according to a two sample test of proportions, $z = 0.51, p = 0.61$. They did not receive any feedback and played a one shot game; therefore, they could not update the initial beliefs on workers’ behavior.

¹⁰ 83% (48/58) of the employers sent a message. The percentage of employers who chose not to send any message did not significantly differ depending on the ability of the selected worker: 17% (7/41) for H and 18% (3/17) for L workers, (two sample tests of proportions, $z = 0.05, p = 0.96$).

- An example of a message containing an implicit suggestion is mess. No. 30: “*Hey congratulations. You got the job I know if you give me only one ecu, you’ll get the highest possible share, but if you give me a 2, it’ll only cost you one ecu and I already get 5 more. Since I gave the job to you, it’d be nice, if you could agree on a value, where we both receive a similar share*”.
2. *Fairness*: messages explicitly appealing to fairness, equalization of earnings, gratitude or reciprocal kindness.¹¹
- An example of a message appealing to fairness is mess. No. 9: “*The employer would be happy about a fair decision that will meet both - employer and employee ? :)*”
 - An example of a message appealing to equalization of earnings is mess. No. 34: “*I ask you to choose a contribution of 7 or 8. Then both of us will have a balanced earning (you have 40/38 and me 35/40). I’m asking you to also decide in my interest.*”

To classify messages we followed a procedure frequently used in other economic experiments, see for instance Cooper and Kagel (2005), Cooper and Lightle (2013), and Sutter and Strassmair (2009). Two research assistants, not aware of the hypothesis being tested, independently assigned messages to the categories.¹² A binary coding rule was used: 1 if the message belongs to the category and 0 otherwise. Each message could be assigned to all, one, or none of the categories. Disagreement only happened in 2% (1/48) of the cases for the category “suggestion” and in 10% (5/48) of the cases for the category “fairness”, Cohen’s κ for suggestion and fairness is equal to 0.94 and 0.72, respectively. In cases of disagreement a third assistant was asked to classify the message to break the ties.¹³

37/48 of the messages are assigned to the category suggestion, 36/48 to fairness and 6/48 of the messages are not assigned to any of the two categories. According to a set of two samples test of proportions, when comparing the messages sent to low ability and high ability workers, we do not find significant differences in the frequency of the arguments used (an appeal to fairness is

¹¹ We choose not to further differentiate among the different motives of fairness (as for example gratitude, reciprocity, inequality aversion, etc.) and other motives such as for example satisfaction, payoff calculations, etc., since given the nature of communication it is very likely that multiple arguments are present in the same message, which in turn makes it difficult to disentangle the effect of the respective motives on the effort choice of the worker.

¹² Our research assistants were native German speakers and classified the messages looking at the original German text. Appendix A lists the messages sent as well as the final classification. The online Appendix includes the instructions for classification given to the research assistants.

¹³ An alternative way could have been to exclude from the analysis the messages on which agreement was not reached. As shown in the Online Appendix, results are unchanged when i) we exclude the messages on which agreement was not reached and ii) when we consider the classification made by each single research assistant separately.

present in 76% of the messages sent to w^H and in 71% of those sent to w^L , $z = 0.37$, $p = 0.71$; a suggestion is present in 79% of the messages sent to w^H and in 71% of those sent to w^L , $z = 0.60$, $p = 0.55$). Similarly, when looking at the average effort suggested by the employers, we do not find significant differences depending on the worker's ability: the average suggestion to low ability worker is 7.20 while to high ability workers it is 6.94 (WMW, $z = 1.56$, $p = 0.12$).¹⁴

Employers are likely to combine fairness and suggestion: this happens in 65% (31/48) of the cases (Spearman's rank correlation coefficients, $\rho = 0.37$, $p < 0.01$).¹⁵ Of the remaining 17 messages (35%) not simultaneously displaying fairness and suggestion, 6 (13%) do not contain any suggestion and do not appeal to fairness; 6 contain a suggestion without appealing to fairness and 5 (10%) only appeal to fairness.

Table 4 reports the average effort exerted depending on the content of the messages sent by high and low ability workers. It can be noted that low ability workers exert a higher average effort than high ability workers when receiving a message containing a suggestion (WMW, $z = 2.92$, $p < 0.01$) despite the fact that the average effort suggested is not significantly different depending on workers' ability. Low ability workers exert a higher average effort compared to high ability workers also when receiving a message appealing to fairness ($z = 2.93$, $p < 0.01$). This result also holds when the two categories are combined ($z = 3.38$, $p < 0.01$).¹⁶

In the CT, not only do low ability workers exert significantly higher effort compared to high ability workers, but, when receiving a message that contains a suggestion, they also tend to match the average suggested effort (Wilcoxon signed-rank test testing that the average effort exerted by w^L is equal to 7.20, $z = 0.26$, $p = 0.80$). This is not the case for high ability workers, who exert an effort level significantly lower compared to the one suggested (Wilcoxon signed-rank test testing that the average effort exerted by w^H is equal to 6.94, $z = 2.6$, $p < 0.01$).¹⁷ So, a possible explanation for the observed difference in effort provision may be that low ability workers, feeling less entitled to the position, react differently than high ability workers once they receive a suggestion by the employer. However, given that the 84% (31/37) of messages

¹⁴ In the cases where the suggestion contained a range of effort levels or an interval we considered the average effort; e.g. if a contribution of 7 or 8 was suggested, we consider 7.50 as the suggested effort. Similarly, if a contribution of '5 or more' or 'at least 5' was suggested, we consider 7.5 as suggested effort (obtained as mean of the 6 effort levels from 5 to 10).

¹⁵ We find no differences depending on the ability of the workers: fairness *and* suggestion are both present in the 75% of the messages sent to low ability and in the 88% of the messages sent to high ability (two samples test of proportion, $z = 1.00$, $p = 0.32$).

¹⁶ Additional results are reported in the Online Appendix.

¹⁷ The average effort exerted by high ability workers is also not significantly different than the one exerted in the NCT (WMW, $z = 1.03$, $p = 0.30$).

Table 4: Communication Treatment: Average effort exerted by the workers (st. dev.) depending on the content of the message and Wilcoxon-Mann-Whitney test comparisons.

	$w^H + w^L$	w^L	w^H	WMW: w^H vs w^L
Suggestion	5.46 (2.60) N=37	7.20 (1.75) N=10	4.81 (2.59) N=27	$z=2.92$ $p<0.01$
No Suggestion	5.09 (2.43) N=11	5.75 (3.20) N=4	4.71 (2.06) N=7	$z=1.07$ $p=0.28$
WMW: <i>Suggestion vs No Suggestion</i>	$z=0.53$ $p=0.60$	$z=0.84$ $p=0.40$	$z=0.35$ $p=0.72$	
Fairness	5.33 (2.57) N=36	7.00 (2.31) N=10	4.69 (2.41) N=26	$z=2.93$ $p<0.01$
No Fairness	5.50 (2.54) N=12	6.25 (3.20) N=4	5.13 (2.75) N=8	$z=2.95$ $p=0.74$
WMW: <i>Fairness vs No Fairness</i>	$z=0.68$ $p=0.50$	$z=0.69$ $p=0.49$	$z=0.35$ $p=0.72$	
Fairness and Suggestion	5.48 (2.63) N=31	7.67 (1.00) N=9	4.59 (2.58) N=22	$z=3.38$ $p<0.01$
No Fairness and No Suggestion	5.67(2.66) N=6	7.33 (0.58) N=3	4.00 (3.00) N=3	$z=1.62$ $p=0.11$
WMW: <i>Fairness and Suggestion vs No Fairness and No Suggestion</i>	$z=0.28$ $p=0.78$	$z=0.42$ $p=0.67$	$z=0.42$ $p=0.73$	

containing a suggestion also appeal to fairness, it is difficult to disentangle the pure effect of these two factors on the effort exerted.

In the CT, not only do low ability workers exert significantly higher effort compared to high ability workers, but, when receiving a message that contains a suggestion, they also tend to match the average suggested effort (Wilcoxon signed-rank test testing that the average effort exerted by w^L is equal to 7.20, $z = 0.26$, $p = 0.80$). This is not the case for high ability workers, who exert an effort level significantly lower compared to the one suggested (Wilcoxon signed-rank test testing that the average effort exerted by w^H is equal to 6.94, $z = 2.6$, $p < 0.01$).¹⁸ So, a possible explanation for the observed difference in effort provision may be that low ability workers, feeling less entitled to the position, react differently than high ability workers once they receive a suggestion by the employer. However, given that the 84% (31/37) of messages containing a suggestion also appeal to fairness, it is difficult to disentangle the pure effect of these two factors on the effort exerted.

To isolate the effect of suggestion on agents' effort provision we run an additional treatment, identical to the CT, with the only exception that communication is limited to a numerical suggestion. The 'Suggestion Treatment' (ST) aims to disentangle the relative importance of the disclosure of expectations (informing the workers about the desired effort level) from the effect

¹⁸ The average effort exerted by high ability workers is also not significantly different than the one exerted in the NCT (WMW, $z = 1.03$, $p = 0.30$).

of words and in particular, the explicit appealing to fairness (calling for gratitude and/or the indication of a desired final outcome of the interaction, as for example, equality in earnings).¹⁹

In the ST we find that, as in the CT, the average effort levels suggested do not differ depending on workers' ability (effort suggested to $w^L=7.60$ and to $w^H=7.02$, WMW test, $z = 1.53$, $p = 0.13$) and compared to the average effort levels suggested in the CT (WMW test, overall: CT: 7.01, ST: 7.13; $z = 0.58$, $p = 0.56$; for w^L : CT: 7.21, ST: 7.60; $z = 1.10$, $p = 0.27$; for w^H : CT: 6.94, ST: 7.02; $z = 0.28$, $p = 0.78$).²⁰ Despite this, in the ST the difference in effort provision by the low ability workers vanishes: the average effort exerted by low ability workers is 4.30, which is significantly lower than the effort exerted by low ability workers receiving a message with a suggestion in the CT (WMW test, $z = 2.07$, $p = 0.04$). Similarly, the effort exerted by the low ability workers is not significantly different compared to the effort exerted by high ability workers both in the ST (WMW test, $z = 0.54$, $p = 0.59$) and in the other treatments, as reported in the Online Appendix. Table 5 compares the average effort exerted by workers who receive a suggestion both in the ST and in the CT. All results are stronger when we restrict the comparisons to workers who in the CT received messages both containing a numerical suggestion and an appeal to fairness.²¹

Overall, our results are in line with results from the literature, showing that rich communication is more effective than bare messages (see, for example Charness and Dufwenberg, 2010; Cooper and Kühn, 2014; Janssen et al., 2010).

6 Conclusions

As mentioned by Fiedler et al. (2011), “the choice of one partner over another is in itself a favorable action towards the chosen partner, and may be reciprocated by that partner” (p. 402). In our experiment, we find that this effect is present, but only for low ability workers when employers can explicitly point out to them their favorable action. Intriguing questions remain for future research.

¹⁹ The Online Appendix contains further details about the ST.

²⁰ In the CT and the ST the average effort suggested is 6.97 and 7.12, respectively. Given the parameters presented in Table 1, suggesting an effort level greater than 7 corresponds to asking higher earnings for the employer than for the employee. We conduct an analysis to see if a suggestion of an effort level > 7 backfires, in the sense that the employees reciprocate less after having received that suggestion. Both in the CT and in the ST we do not find support for this hypothesis (WMW tests $p > 0.30$ for all comparisons; see the Online Appendix for details). Our results are in contrast with previous findings in other games. In a dictator game, Andreoni and Rao (2011) find that when the recipient asks more than the equal division she receives less than if she asks less. In a trust game, Fehr and Rockenbach (2003) and Houser et al. (2008) find that punishment backfires when it is applied to enforce high returns.

²¹ A regression analysis performed using a Tobit estimation confirms this result, see the Online Appendix.

	$w^H + w^L$	w^L	w^H	WMW w^H vs w^L
Suggestion in ST	4.00 (2.68) N=54	4.30 (3.16) N=10	3.93 (2.59) N=44	$z = 0.54$ $p = 0.59$
Suggestion in CT	5.46 (2.60) N=37	7.20 (1.75) N=10	4.81 (2.59) N=27	$z = 2.92$ $p < 0.01$
Suggestion and Fairness in CT	5.48 (2.63) N=31	7.67 (1.00) N=9	4.59 (0.55) N=22	$z = 3.38$ $p < 0.01$
WMW: <i>Suggestion in ST</i> <i>vs Suggestion in CT</i>	$z = 2.07$ $p = 0.04$	$z = 2.07$ $p = 0.04$	$z = 1.41$ $p = 0.16$	
WMW: <i>Suggestion in ST vs</i> <i>Fairness and Suggestion in CT</i>	$z = 2.57$ $p = 0.10$	$z = 2.29$ $p = 0.02$	$z = 2.43$ $p = 0.01$	

Table 5: Average effort exerted by the workers (st. dev.) who receive a suggestion in ST and CT

First, our design highlights on the effect of the selection process that precedes a job relation. In real organizations, both the selection and the wage level are dimensions the employers may determine. Therefore, it seems important to understand how the effects induced by competitive selection of workers (who differ in their ability) interacts with reciprocity concerns (related to the decision about the level of the wage).

Second, we analyze a game between one employer and only two workers. The choice of the employer is simply whether to select the worker with the higher or the lower ability. If the employer selects one worker from a larger group of candidates with different abilities, his choice becomes more complex. The employer should, in fact, predict how the effect of the feeling of entitlement varies according to the ranking of the candidates, taking into account factors such as anchoring and counter-factual reasoning (Baron, 2013; Medvec and Savitsky, 1997). Hence, a relevant question for the employer is whether it is more profitable to select the second-ranked individual, who already feels indebted toward her but is relatively more able with respect to the other candidates, or to choose a much lower-ranked individual who is much less able but even more indebted toward her.

Finally, our analysis suggests that workers who feel less entitled to fill a position may be more grateful and exert a higher effort once employed. This entitlement may also derive from belonging to a discriminated group. In the presence of commonly held negative ex-ante beliefs about some characteristics of the members of a given group (e.g., ethnic or religious group), employers who hire members belonging to discriminated groups could appeal to their moral sentiments to induce a higher effort (O'Reilly III and Pfeffer, 2000).

Overall, our findings suggest that the effect of selection might have been underestimated in previous research. In our experimental design differences in

abilities are very small. While we replicate the finding of Brandts and Solà (2010) in that the choice of the low ability worker has no effect on the low ability's behavior, we show that matters change completely once communication is introduced. Since communication is present almost everywhere in the real world, employers might want to keep in mind that selection of a low ability employee might have a strong motivating effect, when accompanied by the right words.

Acknowledgements We wish to thank Martin Kocher for helpful discussions. We are also grateful for valuable comments from Pedro Rey Biel, two anonymous referees, the editor, and the seminar participants at the Brown Bag Seminar of the Strategic Interaction Group of the Max Planck Institute of Economics in Jena 2012, the THEEM Thurgau Experimental Economics Meeting, 2012, the ESA European Conference, 2012, the AG applied Econometrics at the University of Innsbruck, 2012, and the Eeecon Workshop at the University of Innsbruck 2012. We acknowledge the Max Planck Institute of Economics for their financial support.

References

- Akerlof, G. A., 1982. Labor contracts as partial gift exchange. *The Quarterly Journal of Economics* 97 (4), 543–69.
- Andreoni, J., Rao, J. M., 2011. The power of asking: How communication affects selfishness, empathy, and altruism. *Journal of Public Economics* 95 (78), 513 – 520.
- Baron, J. N., 2013. Empathy wages? Gratitude and gift exchange in employment relationships. *Research in Organizational Behavior* 33 (0), 113 – 134.
- Blume, A., Ortmann, A., 2007. The effects of costless pre-play communication: Experimental evidence from games with Pareto-ranked equilibria. *Journal of Economic Theory* 132 (1), 274–290.
- Bolton, G. E., Ockenfels, A., 2000. ERC: A Theory of Equity, Reciprocity, and Competition. *American Economic Review* 90 (1), 166–193.
- Bramoulle, Y., Goyal, S., 2011. Favoritism. *Cahiers de recherche Working Paper 09-41*, CIRPEE.
- Brandts, J., Cooper, D. J., 2007. It's what you say, not what you pay: An experimental study of manager-employee relationships in overcoming coordination failure. *Journal of the European Economic Association* 5 (6), 1223–1268.
- Brandts, J., Solà, C., 2010. Personal relations and their effect on behavior in an organizational setting: An experimental study. *Journal of Economic Behavior & Organization* 73 (2), 246 – 253.
- Charness, G., 2004. Attribution and Reciprocity in an Experimental Labor Market. *Journal of Labor Economics* 22 (3), 665–688.
- Charness, G., Dufwenberg, M., 2006. Promises and partnership. *Econometrica* 74 (6), 1579–1601.
- Charness, G., Dufwenberg, M., 2010. Bare promises: An experiment. *Economics Letters* 107 (2), 281–283.
- Charness, G., Kuhn, P., 2011. Lab Labor: What Can Labor Economists Learn from the Lab? Vol. 4 of *Handbook of Labor Economics*, O. Ashenfelter and D. Card. Elsevier, Ch. 3, pp. 229–330.
- Charness, G., Rabin, M., 2002. Understanding social preferences with simple tests. *The Quarterly Journal of Economics* 117 (3), 817–869.
- Cooper, D., Lightle, J., 2013. The gift of advice: communication in a bilateral gift exchange game. *Experimental Economics* 16 (4), 443–477.
- Cooper, D. J., Kagel, J. H., 2005. Are Two Heads Better Than One? Team versus Individual Play in Signaling Games. *American Economic Review* 95 (3), 477–509.
- Cooper, D. J., Kühn, K.-U., 2014. Communication, Renegotiation, and the Scope for Collusion. *American Economic Journal: Microeconomics* 6 (2), 247–78.

- Cooper, R., DeJong, D. V., Forsythe, R., Ross, T. W., 1992. Communication in coordination games. *The Quarterly Journal of Economics* 107 (2), 739–771.
- Dawes, R. M., Mctavish, J., Shaklee, H., 1977. Behavior, communication, and assumptions about other people's behavior in a commons dilemma situation. *Journal of personality and social psychology* 35, 1–11.
- Dufwenberg, M., Kirchsteiger, G., 2004. A theory of sequential reciprocity. *Games and Economic Behavior* 47 (2), 268–298.
- Ellingsen, T., Johannesson, M., 2008. Pride and prejudice: The human side of incentive theory. *American Economic Review* 98 (3), 990–1008.
- Fehr, E., Goette, L., Zehnder, C., 2009. A behavioral account of the labor market: The role of fairness concerns. *Annual Review of Economics* 1 (1), 355–384.
- Fehr, E., Kirchsteiger, G., Riedl, A., 1998. Gift exchange and reciprocity in competitive experimental markets. *European Economic Review* 42 (1), 1–34.
- Fehr, E., Rockenbach, B., 2003. Detrimental effects of sanctions on human altruism. *Nature* 422 (6928), 137–140.
- Fehr, E., Schmidt, K. M., 1999. A theory of fairness, competition, and cooperation. *The Quarterly Journal of Economics* 114 (3), 817–868.
- Fiedler, M., Haruvy, E., Li, S. X., 2011. Social distance in a virtual world experiment. *Games and Economic Behavior* 72 (2), 400 – 426.
- Fischbacher, U., 2007. z-Tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics* 10 (2), 171–178.
- Gächter, S., Fehr, E., 2002. Fairness in the labour market - a survey of experimental results. IEW - Working Papers 114, Institute for Empirical Research in Economics, University of Zurich.
- Geanakoplos, J., Pearce, D., Stacchetti, E., 1989. Psychological games and sequential rationality. *Games and Economic Behavior* 1 (1), 60–79.
- Greiner, B., 2004. An online recruitment system for economic experiments. Tech. Rep. 13513, MPRA Paper.
- Houser, D., Xiao, E., McCabe, K., Smith, V., 2008. When punishment fails: Research on sanctions, intentions and non-cooperation. *Games and Economic Behavior* 62 (2), 509–532.
- Isaac, R. M., Walker, J. M., 1988. Communication and free-riding behavior: The voluntary contribution mechanism. *Economic Inquiry* 26 (4), 585–608.
- Janssen, M. A., Holahan, R., Lee, A., Ostrom, E., 2010. Lab experiments for the study of social-ecological systems. *Science* 328 (5978), 613–617.
- Koukoulis, A., Levati, M. V., Weisser, J., 2012. Leading by words: A voluntary contribution experiment with one-way communication. *Journal of Economic Behavior & Organization* 81 (2), 379–390.
- Levine, D. K., 1998. Modeling altruism and spitefulness in experiment. *Review of Economic Dynamics* 1 (3), 593–622.
- Levine, D. K., Weinschelbaum, F., Zurita, F., 2010. The brother-in-law effect. *International Economic Review* 51 (2), 497–507.
- Medvec, V., Savitsky, K., 1997. When doing better means feeling worse: The effects of categorical cutoff points on counterfactual thinking and satisfaction. *Journal of Personality and Social Psychology* 72 (6), 1284–1296.
- O'Reilly III, C., Pfeffer, J., 2000. The Men's Wearhouse: Growth in a declining market. in: "Hidden value: How great companies achieve extraordinary results with ordinary people", 79–98.
- Ostrom, E., Walker, J., Gardner, R., 1992. Covenants with and without a sword: Self-governance is possible. *The American Political Science Review* 86 (2), pp. 404–417.
- Prendergast, C., Topel, R. H., 1996. Favoritism in organizations. *Journal of Political Economy* 104 (5), 958–78.
- Rabin, M., 1993. Incorporating fairness into game theory and economics. *American Economic Review* 83 (5), 1281–1302.
- Slonim, R., Garbarino, E., 2008. Increases in trust and altruism from partner selection: Experimental evidence. *Experimental Economics* 11 (2), 134–153.
- Sutter, M., Strassmair, C., 2009. Communication, cooperation and collusion in team tournaments - an experimental study. *Games and Economic Behavior* 66 (1), 506–525.

Xiao, E., Houser, D., 2005. Emotion expression in human punishment behavior. Proceedings of the National Academy of Sciences of the United States of America 102 (20), 7398–7401.

A Messages

In Table 6 we report all the messages (translated from German) sent in the CT and the pertaining categories (described in section B.2 in the main file) to which they have been assigned. For each message, column 4 (w^k) indicates whether it was sent to a low ability (L) or to a high ability worker (H); columns 6 and 7 indicate the final categorization where ‘S’ stands for ‘suggestion’ and ‘F’ for ‘fairness’. For the cases where the two coders disagreed, the final classification is indicated in bold. Disagreement for the category ‘suggestion’ occurred in one out of 48 of the cases (2%). Specifically, in message No. 42 the first coder assigned 1 while the second coder 0. Disagreement for the category ‘fairness’ occurred in 5 messages over 48 (10%). Specifically, in messages No. 12, 13, and 32 the first coder assigned 1 while the second one 0; in messages No. 31 and 58 the opposite happened.

Table 6: Messages and categories, part I

N	Sess.	Subj.	w ^k	Translated Message	S	F	sugg
1	1	2	H	-	-	-	-
2	1	4	H	Since I made a great choice, you shall thankfully not contribute less than 5!	1	1	7.50
3	1	8	H	Hello employee, I chose you, because I trust you! Please choose a contribution of 8 and both of us will be compensated justly.	1	1	8.00
4	1	9	H	I am doing this today for the first time and am not sure which is a good strategy to choose. Maybe we don't start too high for the beginning.	0	0	-
5	1	10	L	-	-	-	-
6	1	11	H	Hello, now I've employed you. Before making a choice, you receive this message. It'd be fair, I guess, if either of us received a benefit from this game. Therefore it'd be great, if you chose a contribution of 7.	1	1	7.00
7	1	20	H	Live and let live! I suggest you to choose a contribution of 7, that makes 40 for you and 37,5 for me. Why? The decision on employee A was clear. I want to look at this statistically. All in all everyone has the highest benefit, when cooperating, that is, because in the statistic mean everyone benefits from this... You're to decide and it's ok for you to benefit from this the most, but also consider, that you might be sitting here as well and inversely be setting your hopes in me... So, I am counting on you and on all of us participants profiting and not the bank :) Best regards	1	1	7.00
8	1	24	H	I want this business to turn out fair for you, as the employee, as well as for me. Therefore I would like to ask you, employee A, to choose a contribution of 7 or 8, so the income for either of us would be fair.	1	1	7.50
9	1	26	H	The employer would be happy about a fair decision, that will meet both - employer and employee :)	0	1	-
10	2	1	L	Dear employee B, even though your performances so far were not quite as good as the other candidates (see Table 2), I decided on you - against all advices and against all probabilities. I hope we get along well and can make a fair agreement, in which we both earn about the same. Therefore please choose a contribution of 7 or 8. Thank you, your new employer :)	1	1	7.50
11	2	4	H	-	-	-	-
12	2	8	H	in my opinion, we should make an agreement between employer and employee, the best for me and you, i want to demand a job performance of 7 from you, so everyone gets a piece of the cake, and in my opinion 7 is the best for both of us.	1	1	7.00
13	2	13	L	Hello. I would be happy, if you made a contribution of 5 or 6, so the game ends quite well for either of us and everyone benefits from it :) You only lose 60 Cent and I receive 3 Euros in exchange. That'd be ideal and good for our organizational climate :P	1	1	5.50
14	2	17	L	Good evening :-) I think it'd be the fairest, if you chose a contribution of 6,7 or 8, so we both benefit from this. Still have some fun with the experiment	1	1	7.00
15	2	25	H	I'm asking you to choose a job performance of 7. Then I'd receive 37.5 ECU and you 40 ECU. We'd both profit.	1	0	7.00
16	2	26	H	-	-	-	-
17	2	27	H	Dear partner, we're both here for the same reason. I want to make money in this experiment, yet I don't want to earn more than you do. I hope we can cooperate with a very good result for both of us. If you choose a contribution of 7, I earn 37,5 ECU. You earn even more. Greetings, to a good cooperation =)	1	1	7.00
18	2	28	L	I suggest, you pick a contribution of 8, so you receive a relatively fair income of 38 ECU and me an income of 40 ECU, which would be relatively equal!	1	1	8.00
19	2	29	H	Hello employee A. I picked you and gave you the opportunity to earn at least 3 times as much as the competitor. Insofar I'd be glad, if you'd give me the chance to earn at least half as much as you do, by choosing a medium contribution of 5. Thank you.	1	1	5.00
20	3	12	H	Choose the golden 7, because only seven is fair for both sides. So (make a) job performance of 7 and both are pleased.	1	1	7.00
21	3	13	L	Hello, you are employed, I expect you to make a high contribution in favor of the company. Your employer	0	0	-
22	3	16	H	Dear employee A, in an experiment you have to keep quiet. Chewing gum and any sort of contact to other participants is forbidden. I have the feeling, that you are the right one for this job and I hope, to be proved correct.	0	0	-
23	3	17	L	Hello employee B! I picked you, even though I generally receive a lower income with you. I sort of rescued you from unemployment. This is my first sign of confidence in your good work. My working suggestion: Your job performance is 8. Then we both make good money - and almost equal: You 38 ECU - me 40 ECU... I count on you!	1	1	8.00
24	3	19	H	-	-	-	-
25	3	23	H	Dear employee A, I picked you, since you are going to get me the highest profit. To be fair it'd be great, if you didn't choose a job performance too low, so we both get something out of this. Yours sincerely your employer.	0	1	-
26	3	24	H	Hi Hi! I hope you are playing fair and chose a contribution through which be both go out of this with a decent earning. I'd suggest you choose a contribution of seven. That gives you 4 Euro and me 3,75 Euro. Thank you!	1	1	7.00
27	3	25	H	For reasons of fairness I'd say, you act in a manner, that makes both of us profit in the end. I'd expect a job performance of at least 7 from you, since we both receive an almost equal income.	1	1	8.50
28	3	26	H	Dear employee, we welcome you to the company. For the distribution of incomes I suggest you a contribution of 8. That makes both income about equal, with regard to the entrepreneurial risk.	1	1	8.00

Table 6: Messages and categories, part II

N	Sess.	Subj.	w^k	Translated Message	S	F	sugg
29	4	2	H	in my judgment 7 is a good choice. You still get a higher share than me and I receive almost as much as you. Of course you can choose 1 and leave the money here. But this would not give you much more than one Euro profit.	1	1	7.00
30	4	5	H	hey, congratulations. You got the job. I know, if you give me only one ecu, you'll get the highest possible share, but if you give me a 2 it'll only cost you one ecu and I already get 5 more. Since I gave the job to you, it'd be nice, if we could agree on a value, where we both receive a similar share.	1	1	7.00
31	4	8	H	Hello employee A, I decided on you, since your chosen contribution and the income connected to it are higher. Therefore I assume, you do a better job than employee B and of course deserve a higher income. Thus I hope you are more motivated. Best regards, your employer	0	0	-
32	4	13	H	I think with a contribution of 5 we both get quite well through this round.	1	0	5.00
33	4	14	H	Hey, I picked you as my employee and would suggest a contribution of 6 ECUs.	1	0	6.00
34	4	16	L	I ask you to choose a contribution of 7 or 8. Then both of us will have a balanced earning (you have 40 / 38 and me 35 / 40). I'm asking you to also decide in my interest.	1	1	7.50
35	4	18	H	I think it'd be fair, if you contribute at least 2 ECU, because then everyone in our group would have at least 10 ECU and you'd even go out with 5 times as much. If you decide differently there's nothing I can do about it, but consider, that I am the one who gave you the chance to earn more money at all	1	1	6.00
36	4	19	H	One hand cleans the other	0	1	-
37	4	23	L	-	-	-	-
38	4	25	H	dear A, I'd like to ask you to contribute 7 or 8 units of work, since that'd make our income about equal, with relatively little financial effort for you, I'd benefit from that a lot. Thank you very much and to a good cooperation :-), your employer	1	1	7.50
39	5	4	L	I suggest, you choose 7 or 8, since in that case, we'd receive almost the same profit.	1	1	7.50
40	5	10	L	-	-	-	-
41	5	12	H	-	-	-	-
42	5	14	H	For the employee and the employer a medium sized contribution of the employee would be advantageous. This choice might be rewarded by the employer in the second part of the experiment. I'm looking forward to the collaboration :-)	1	0	5.00
43	5	16	L	Hello, I picked you, despite of the lower income proportion compared to A, with the expectation, that you choose a contribution of 8, since that's give us a relatively balanced income. Regards	1	1	8.00
44	5	19	H	Hello, here is your employer :) I'm giving you a contribution suggestion of 5 or higher... fair, isn't it?	1	1	7.50
45	5	20	H	Hello, I picked you, because together we can receive a higher profit. I'd like to ask you to choose a contribution of 7, because then the profit will be distributed among us equally. With this distribution I already earn less than you!	1	1	7.00
46	5	25	H	I suggest to set the contributions equitably and if necessary, dependent on the position in the company (e.g. considering the distribution of responsibilities among the company). Nobody should lose on this.	0	1	7.00
47	5	27	L	Hello! I think we are going to work together well (since B is my lucky letter)! I'd be glad, if you chose a high contribution, because either profit will be optimized! Have fun and good luck!	0	0	-
48	5	29	H	-	-	-	-
49	6	1	L	How about agreeing on a mean of 5? Then everyone benefits from this :-)	1	0	5.00
50	6	2	H	Hello, please choose a contribution of 7 or 8. Then either of us gets the highest profit. Thanks a lot!	1	0	7.50
51	6	4	H	-	-	-	-
52	6	5	L	Hello, it'd be nice, if we could meet in the middle somehow, so we both get something out of this, which means approximately the same profit for both. :-)	0	1	7.00
53	6	11	H	I'm in favor of both (employer, employee) choosing a contribution of 7 or 8. thus both have about the same income, if I understood everything correctly	1	1	7.50
54	6	19	H	Hello, for it to be fair, I'd suggest a contribution of 7. This would mean a profit of 4 instead of 5 for you, so a loss of 1. But my profit of 3,75 is still less. If you chose a contribution of 1, I'd get less than the unemployment compensation, employee B receives. That'd not be fair somehow.	1	1	7.00
55	6	20	H	are we agreeing on a contribution of 7 ECU? Then I get 37,5 ECU and you 40 ECU, actually that'd be the fairest for both of us.	1	1	7.00
56	6	23	H	Hello team member! If you choose a contribution of 7 ECU, we both earned about the same, so we'd have a win-win-situation! Best regards and lots of fun with the experiment :-)	1	1	7.00
57	6	24	L	A contribution of 8 would be most balanced for both sides, concerning the income. Thus both sides receive a relatively high result.	1	1	8.00
58	6	28	H	Dear employee, welcome to the Jenaer Company Schrubber-Island. We sell cleaning supply and are specialized on brushes and scrubbers made from valuable ecological wood. I chose you hoping to win engaged employees, who put motivation and trust into our valuable scrubbers and into our company's team.	0	0	-

ONLINE APPENDIX

B Additional Statistical Tests

In this section we present additional statistical tests supporting our results.

B.1 Effort exertion in the CT and the NCT

The findings reported in Table 7 provide further support to Result 2: in the CT low ability workers exert significantly higher effort compared to the high ability workers. Table 7 presents the results of Tobit regressions, where the dependent variable is represented by the effort level chosen by the selected worker. As explanatory variables, we include the hired employee's ability (through dummy A^L which takes value 1 if the hired employee is of low ability and 0 otherwise), a treatment dummy, CT (which takes value 1 for the Communication Treatment and 0 otherwise) and the interactions between the hired employee's ability and the treatment dummy. In model (1), being low ability has a positive and significant impact on effort choice. Similarly, being in the CT also significantly increases the effort exerted. In model (2), where the interaction term between the selected employee's ability and the CT is introduced, being of low ability and being in the CT has a positive and significant effect on the effort exerted, while the other explanatory variables are not statistically significant.

B.2 Communication Content

In this section we provide additional information about the effort exerted by the employees in the CT. In the main text we only consider the non empty messages. However, in 10 out of 58 (i.e. 17.%) cases the employer chooses not to send any message to the selected employee. Employees who receive an empty message exert on average an effort equal to 4.90 (st. dev. 3.93). In particular, low ability workers (3/10) exert an average effort of 8.67 (st. dev. 1.53) while high ability workers (7/10) exert an average effort of 3.29 (st. dev. 3.50).

Table 5 of the main text reports the average effort exerted depending on the content of the messages sent to high and low ability workers. 6 workers receive a messages containing a suggestion without any appeal to fairness and exert an average effort of 5.33 (w^H (5/6) exert an average effort of 5.33, while w^L (1/6) exert an average effort of 3.00). 5 workers receive a messages containing an appeal to fairness without any suggestion and exert an average effort of 4.40 (w^H (4/4) exert an average effort of 5.25, while w^L (1/5) exert an average effort of 1.00). Low ability workers exert an average effort not significantly different to the one exerted by the high ability workers when they receive a

Table 7: Tobit Regression Results for Effort Choices

Model	(1)	(2)
Dependent variable	Effort	Effort
A^L	1.06** (0.50)	-0.43 (0.60)
CT	1.42*** (0.48)	0.43 (0.59)
$A^L \cdot TC$	-	3.14*** (0.92)
constant	3.62*** 0.38	4.13*** 0.41
σ	2.53*** (0.13)	2.48*** (0.13)
N	116	116
Log pseudo-likelihood	-271.28	-266.47
Pseudo R2	0.02	0.04

***, **, * denote significance at the 1%, 5%, and 10% level, respectively. The regressions in models 1 and 2 involve 0 left-censored and 3 right-censored observations.

message that does not contain any suggestion ($z = 1.07$, $p = 0.28$) or any appeal to fairness ($z = 0.95$, $p = 0.74$).

B.3 Suggestion Treatment

Table 8 reports the average effort exerted in the Suggestion Treatment depending on workers' ability. Comparisons with the CT and the NCT treatment are based on WMW tests. The effort exerted by high ability workers does not differ significantly across treatments. Numerical suggestion does not affect the behavior of low ability workers: the average effort exerted in the ST is not significantly different to the one in the NCT.

Table 9 provides further support to the statistical tests reported in Table 5 of the main text: communication influences the behavior of workers and its impact seems to go beyond the pure transmission of information about reference points. Table 9 presents the results of Tobit regressions, where the dependent variable is represented by the effort level chosen by the selected worker. Only the workers who receive a suggestion are considered, that is, all workers in the ST (i.e. 54 workers) and workers who receive a message containing a suggestion in the CT (i.e. 37 workers). As explanatory variables, we include the hired employee's ability (through dummy A^L which takes value 1 if the hired employee has low ability and 0 otherwise), a treatment dummy, CT (which takes value 1 for the CT and 0 otherwise) and the effort suggested

Table 8: ST, average effort exerted by the workers (st. dev.) and WMW test comparisons.

Average effort provided	
$w^H + w^L$	4.00 (2.68)
w^H	3.93 (2.59)
w^L	4.30 (3.16)
MWM test NCT vs ST	
$w^H + w^L$	$z = 0.12, p = 0.90$
w^H	$z = 0.47, p = 0.64$
w^L	$z = 0.27, p = 0.79$
MWM test CT vs ST	
$w^H + w^L$	$z = 2.45, p = 0.01$
w^H	$z = 0.97, p = 0.33$
w^L	$z = 2.26, p = 0.02$

by the employer. In model (2), we also include the interactions between the hired employee's ability and the treatment dummy, and the hired employee's ability and the effort suggested.

In model (1), being low ability has a positive and significant impact on effort choice. Similarly, being in the CT (i.e. receiving a suggestion supported by free form communication) also significantly increases the effort exerted. In model (2), where the two interaction terms are introduced, only the interaction term between the ability and the CT has a positive and significant effect on the effort exerted, while the other explanatory variables are not statistically significant.

Table 9: Tobit Regression Results for Effort Choices in CT and ST

Model	(1)	(2)
Dependent variable	Effort	Effort
A^L	1.63* (0.93)	-6.68 (6.79)
CT	1.83** (0.78)	1.17 (0.87)
suggested effort	0.72 (0.30)	-0.02 (0.36)
$A^L \cdot CT$	-	3.13* (1.86)
$A^L \cdot$ suggested effort	-	0.91 (0.88)
constant	2.39 2.18	3.32 2.28
σ	3.52 (0.34)	3.45 (0.34)
N	91	91
Log pseudo-likelihood	-196.33	-194.64
Pseudo R2	0.02	0.03

*** **, * denote significance at the 1%, 5%, and 10% level, respectively. The regressions in models 1 and 2 involve 0 left-censored and 3 right-censored observations. We consider 54 workers in the ST and the 37 workers receiving a suggestion in the CT.

B.4 Suggesting an effort level $\leq / > 7$

Table 13: Average effort in the Communication Treatment depending on the suggested effort, st. dev. in parenthesis

	Suggesting effort ≤ 7	Suggesting effort > 7	WMW test
$w^H + w^L$	5.18 (2.63) 22/37, 59.46%	5.87 (2.59) 15/37, 40.54%	$z = 1.04$ $p = 0.30$
w^H	4.95 (2.50) 19/27, 70.37%	4.50 (2.93) 8/27, 29.63%	$z = 0.50$ $p = 0.62$
w^L	6.67 (3.51) 3/10, 30%	7.43 (0.53) 7/10, 70%	$z = 0.37$ $p = 0.71$

Note: In those cases in which the suggestion contained a range of effort levels or an interval we considered the average effort; e.g. if a contribution of 7 or 8 was suggested, we consider 7.50 as the suggested effort. Similarly, if a contribution of 5 or more' was suggested, we consider 7.5 as suggested effort (obtained as mean of the 6 effort levels from 5 to 10).

Table 13: Average effort in the Suggestion Treatment depending on the suggested effort, st. dev. in parenthesis.

	Suggesting effort ≤ 7	Suggesting effort > 7	WMW test
$w^H + w^L$	4.00 (2.56) 31/54, 57.41%	4.00 (2.89) 23/54, 43.59%	$z = 0.43$ $p = 0.67$
w^H	4.11 (2.50) 28/44, 63.64%	3.63 (2.80) 16/44, 36.36%	$z = 0.20$ $p = 0.84$
w^L	3.00 (3.46) 3/10, 30%	4.86 (3.13) 7/10, 70%	$z = 0.95$ $p = 0.34$

B.5 Classification of the Messages

In this section we replicate the analysis excluding the 6 messages on which the two coders' classification were different. Disagreement for the category 'suggestion' occurred in one out of 48 of the cases, 2%. Specifically, in message No. 42 (reported in the Appendix of the main text) the first coder assigned 1 while the second coder 0. Disagreement for the category 'fairness' occurred in 5 messages over 48, (10%). Specifically, in messages No. 12, 13 and 32 the first coder assigned 1 while the second one 0; in messages No. 31 and 58 the opposite happened.

Table 10: Communication Treatment: Average effort exerted by the workers (st. dev.) depending on the content of the message and Wilcoxon-Mann-Whitney test comparisons. **Only messages on which both research assistant assigned the same categories are considered.**

	$w^H + w^L$	w^L	w^H	WMW: w^H vs w^L
Suggestion	5.42 (2.62) N=36	7.20 (1.75) N=10	4.73 (2.60) N=26	$z=2.95$ $p<0.01$
No Suggestion	5.09 (2.43) N=11	5.75 (3.20) N=4	4.71 (2.06) N=7	$z=1.07$ $p=0.28$
WMW: Suggestion vs No Suggestion	$z=0.47$ $p=0.64$	$z=0.84$ $p=0.40$	$z=0.25$ $p=0.80$	
Fairness	5.32 (2.41) N=34	6.67 (2.18) N=9	4.84 (2.34) N=25	$z=2.56$ $p<0.01$
No Fairness	5.56 (2.30) N=9	5.67 (2.31) N=3	5.50 (2.51) N=6	$z=0.00$ $p=1.00$
WMW: Fairness vs No Fairness	$z=0.20$ $p=0.84$	$z=1.14$ $p=0.25$	$z=0.80$ $p=0.42$	
Fairness and Suggestion	5.48 (2.71) N=29	7.38 (0.52) N=8	4.76 (2.51) N=21	$z=3.05$ $p<0.01$
No Fairness and No Suggestion	4.75 (2.87) N=4	7.00 (0.00) N=2	2.05 (2.12) N=2	-
WMW: Fairness and Suggestion vs No Fairness and No Suggestion	$z=0.58$ $p=0.56$	$z=0.98$ $p=0.33$	$z=1.23$ $p=0.22$	

In order to confirm the content of Table 4 in the main text, we restrict our analysis to all subjects receiving a suggestion (or in the ST or in the CT). We compare the effort exerted by workers who receive

- Numerical (ST) vs verbal suggestion (CT):
 - low ability workers: CT: 7.2 (st. dev. 1.75) vs ST: 4.3 (st. dev. 3.16), MWT $z=2.07$, $p=0.04$;
 - high ability workers: CT: 4.73 (st. dev. 2.60) vs ST: 3.93 (st. dev. 2.59), MWT $z=1.25$, $p=0.21$.
- Numerical (ST) vs verbal suggestion with appeal to fairness (CT):
 - low ability workers: CT: 7.38 (st. dev. 0.52) vs ST: 4.3 (st. dev. 3.16), MWT $z= 2.05$, $p=0.04$;
 - high ability workers: CT: 4.76 (st. dev. 2.51) vs ST: 3.93 (st. dev. 2.59), MWT $z= 1.17$, $p=0.24$.

Results are basically unchanged compared to the ones reported in the main text.

B.5.1 Individual Classification

In this section we replicate the results contained in Table 4 and 5 of the main text using the classification made by each research assistant. Table 11 is based on the classification made by the first research assistant, while Table 12 is based on the classification made by the second one. Results are basically unchanged compared to the ones reported in the main text.

If we restrict our analysis to all subjects receiving a suggestion (or in the ST or in the CT), we can compare the effort exertion of subjects receiving

- Numerical (ST) vs verbal suggestion (CT):
 - low ability workers: CT: 7.2 (st. dev. 1.75) vs ST: 4.3 (st. dev. 3.16), MWT $z=2.07$, $p=0.04$;
 - high ability workers: CT: 4.73 (st. dev. 2.60) vs ST: 3.93 (st. dev. 2.59), MWT $z=1.25$, $p=0.21$.
- Numerical (ST) vs verbal suggestion with appeal to fairness (CT):
 - low ability workers: CT: 7.67 (st. dev. 1.00) vs ST: 4.3 (st. dev. 3.16), MWT $z= 2.29$, $p=0.022$;
 - high ability workers: CT: 4.43 (st. dev. 2.63) vs ST: 3.93 (st. dev. 2.59), MWT $z= 0.72$, $p=0.47$.

If we restrict our analysis to all subjects receiving a suggestion (or in the treatment suggestion or in the communication treatment), we can compare the effort exertion of subjects receiving

- Numerical (ST) vs verbal suggestion (CT):
 - low ability workers: CT: 7.2 (1.75) vs ST: 4.3 (3.16), MWT $z=2.07$, $p=0.038$;
 - high ability workers: CT: 4.81 (2.59) vs ST: 3.93 (2.59), MWT $z=1.41$, $p=0.16$.
- Numerical (ST) vs verbal suggestion with appeal to fairness (CT):

Table 11: **Research assistant 1:** Communication Treatment: Average effort exerted by the workers (st. dev.) depending on the content of the message and Wilcoxon-Mann-Whitney test comparisons.

	$w^H + w^L$	w^L	w^H	WMW: w^H vs w^L
Suggestion	5.42 (2.62) N=36	7.20 (1.75) N=10	4.73 (2.60) N=26	$z=2.95$ $p<0.01$
No Suggestion	5.25 (2.07) N=12	5.75 (3.20) N=4	4.00 (2.07) N=8	$z=0.97$ $p=0.33$
WMW: Suggestion vs No Suggestion	$z=0.31$ $p=0.76$	$z=0.84$ $p=0.40$	$z=0.06$ $p=0.95$	
Fairness	5.33 (2.62) N=39	7.09 (2.21) N=11	4.43 (2.63) N=28	$z=3.22$ $p<0.01$
No Fairness	5.56 (2.30) N=9	5.67 (2.31) N=3	5.50 (2.51) N=6	$z=0.00$ $p=1.00$
WMW: Fairness vs No Fairness	$z=0.11$ $p=0.91$	$z=1.43$ $p=0.15$	$z=0.92$ $p=0.36$	
Fairness and Suggestion	5.34 (2.71) N=34	7.67 (1.00) N=9	4.43 (2.63) N=23	$z=3.45$ $p<0.01$
No Fairness and No Suggestion	5.20 (2.68) N=5	7.00 (0.00) N=2	4.00 (3.00) N=3	-
WMW: Fairness and Suggestion vs No Fairness and No Suggestion	$z=0.19$ $p=0.85$	$z=1.11$ $p=0.27$	$z=0.25$ $p=0.80$	

Table 12: **Research assistant 2:** Communication Treatment: Average effort exerted by the workers (st. dev.) depending on the content of the message and Wilcoxon-Mann-Whitney test comparisons.

	$w^H + w^L$	w^L	w^H	WMW: w^H vs w^L
Suggestion	5.46 (2.60) N=37	7.20 (1.75) N=10	4.81 (2.59) N=27	$z=2.92$ $p<0.01$
No Suggestion	5.09 (2.43) N=11	5.75 (3.20) N=4	4.71 (2.06) N=7	$z=1.07$ $p=0.28$
WMW: Suggestion vs No Suggestion	$z=0.53$ $p=0.60$	$z=0.84$ $p=0.40$	$z=0.35$ $p=0.72$	
Fairness	5.32 (2.41) N=34	6.67 (2.18) N=9	4.84 (2.34) N=25	$z=2.56$ $p<0.01$
No Fairness	5.50 (2.93) N=14	7.00 (2.55) N=5	4.67 (2.92) N=9	$z=1.65$ $p=0.10$
WMW: Fairness vs No Fairness	$z=0.40$ $p=0.69$	$z=0.29$ $p=0.77$	$z=0.12$ $p=0.90$	
Fairness and Suggestion	5.48 (2.44) N=29	7.38 (0.52) N=8	4.76 (2.50) N=21	$z=3.05$ $p<0.01$
No Fairness and No Suggestion	5.67 (2.66) N=6	7.33 (0.58) N=3	4.00 (3.00) N=3	-
WMW: Fairness and Suggestion vs No Fairness and No Suggestion	$z=0.32$ $p=0.75$	$z=0.12$ $p=0.90$	$z=0.45$ $p=0.65$	

- low ability workers: CT: 7.38 (0.52) vs ST: 4.3 (3.16), MWT $z=2.05$, $p=0.04$;
- high ability workers: CT: 4.76 (2.50) vs ST: 3.93 (2.59), MWT $z=1.17$, $p=0.24$.

C Instructions for the Coders of the Messages

Each of you should follow these steps independently.

1. Read carefully each message listed in the excel file.
2. For each message indicate whether it can be assigned to one of the following two categories or not, where 1=assigned, 0=not assigned. Each message can be assigned to one/two or none of the categories. In the excel file provided you find a column for each of the categories.

Categories:

1. *Suggestion*: messages containing a) an explicit suggestion, i.e. a numerical suggestion of an effort choice, that can be either a single number or a range, or b) an implicit suggestion, i.e. a precise description of a behavior, that allows the worker to infer the request of a level/range of effort.
2. *Fairness*: messages explicitly appealing to fairness, equalization of earnings, gratitude or reciprocal kindness.

If categories are not clear to you or if you have any doubt in doing the classification just let us know and we will be happy to discuss with you. We would like you to do the categorization looking at the German version of the messages (contained in the excel sheet named “German messages”). Once the classification is completed, we would like you to have a look to the English translation of the messages, which is contained in the excel sheet named “with English translation” and to comment in case you think the translation is not appropriate/in case you would have translated it differently. You do not need to agree on the same categorization, so when you are done you can just return the excel file with the categories to us.

D Experimental Instructions

In this section, we report the instructions for our four treatments. As benchmark we use the instructions for the No Communication Treatment (NCT) and report, in parentheses, the text which is specific for the other treatments. We will refer to the Communication, Suggestion, and Random Device Treatment as CT, ST, and RDT, respectively. The post-experimental questionnaire is available upon request.

Welcome! You are about to participate in an experiment funded by the Max Planck Institute of Economics. Please switch off your mobile and remain quiet. It is strictly forbidden to talk to the other participants. Whenever you have a question, please raise your hand and one of the experimenters will come to your aid. You will receive 2.50 euros for showing up on time. Besides this, you can earn more. The show-up fee and any additional amounts of money you may earn will be paid to you in cash at the end of the experiment. Payments are carried out privately, i.e., the others will not see your earnings. During the experiment we shall speak of ECUs (Experimental Currency Unit) rather than euros. The conversion rate is 10 ECUs = 1 euro. This means that for each ECU you earn you will receive 0.1 euro. To simplify, in the following we will only be speaking of male participants. This is to be understood as gender neutral. The experiment consists of two parts. The instructions for the first part follow on the next page. The instructions for the second part will be distributed after all participants have completed the first part. All instructions are identical for all participants, and we read them aloud such that you can verify them.

D.1 Instructions of part one

D.1.1 Group formation

In this experiment, you will be matched with two other participants to form a group of three persons. The three group members will interact with each other just once. We will refer to each group as a firm and to the three group members as Employer, employee A, and employee B:

- with 1/3 probability you will be the Employer;
- with 1/3 probability you will be employee A;
- with 1/3 probability you will be employee B.

This means that each participant has the same probability to be selected as Employer, employee A, and employee B. You will be assigned to a group and to a role entirely at random. The computer will inform you of your role before the decision-making part of the experiment begins. No one of the participants will at any point of the experiment know the identity of the other people in his group. Therefore all decisions are made anonymously.

D.1.2 Decisions within a firm

The structure of decision making within each firm is as follows. There is a job to be offered.

First, [**CT**, **ST** the employer chooses] [**RDT**: a random mechanism picks]

- one of the two employees to hire and to work for the employer
- [**CT**, **ST** and he can send one message to the chosen employee].

Then the hired employee

- learns whether the [**CT**, **ST** employer] [**RDT**: random mechanism] hired him,
- [**CT**, **ST**: reads the message the employer has sent him, and]
- he chooses an effort level (effort): an integer number from 0 to 10 (included).

The employee who is not selected receives an unemployment benefit equal to 10 ECUs.

D.1.3 Communication

[**CT**: The employer may send one message to the employee he has selected. In this message, he can say anything he likes, including making a suggestion what he thinks is the best approach to the experiment, what he intends with his selection, or what he would like the other to do. The chosen employer can read the message before choosing the level of effort. However, there are two restrictions on the types of messages that he may send.

- First, he may not send a message that attempts to identify himself to other group members. Thus, he may not use his real name, nicknames, or self-descriptions of any kind (e.g., I am Smith here, I'm the guy in the red shirt sitting near the window; or It's me, Sandy, from French class, or even, e.g., I am a woman [Latino, Asian-American, etc.], etc...) To make sure that the rule of anonymity is adhered to, each message will be screened by a monitor who is a member of the experiment team before it is seen by the other member of your group.
- The second restriction is that there must not be any threats or promises pertaining to anything that is to occur after the experiment ends. To make sure that neither of the two restrictions is violated, all messages are going to be read by a member of the experimental staff before they are shown on the screen of the chosen employee.

If a message violates one of the restrictions, it is not going to be sent to the employee, and the employer does not receive payment for the experiment. The employer has a maximum of 3 minutes available to write a message. A clock will show you how much time you have left in the communication period.]

D.1.4 Suggestion

[**ST**: The employer may send one message to the employee he has selected. In this message, he can ONLY indicate a number between 0 and 10 representing the effort level he would like the other to choose.

The chosen employer can read the message before choosing the effort

The messages sent can only contain a number between 0 and 10 and no words or symbols. To make sure that this restriction is not violated, all messages are going to be read from a member of the experimental staff before they are shown on the screen of the chosen employee.

If a message violates one of the restrictions, it is not going to be sent to the employee and the employer does not receive any payment for the experiment.

The employer has a maximum of 3 minutes available to write a message. A clock will show you how much time you have left in the communication period.]

D.1.5 Distribution of earnings within a firm

Earnings within the Firm are determined according to the following rules:

Earnings of the employer: The employer receives revenue from the effort chosen by the selected employee and incurs costs from the wage paid to him. The revenue produced by the effort chosen by the selected employee is the following: If the selected employee is **employee A**, then the revenue produced equals 50 times the effort chosen by the employee, plus 0.5, times 0.10. Therefore the employer's earnings are:

$$\text{Employer's earnings} = [50 * (\text{effort chosen by employee A} + 0.5) * 0.10]$$

if effort > 0 while employer's earnings = 0 if effort = 0.

Table 13 reports the earnings (in ECUs) for the employer when employee A is selected for each effort level.

Chosen effort	0	1	2	3	4	5	6	7	8	9	10
Income of employer if A is selected	0	7.5	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5	52.5

Table 13: Earnings (in ECUs) for the employer when employee A is selected

If the selected employee is **employee B**, then the revenue produced equals 50 times 0.10 times the effort he chooses. Therefore the employer's earnings are:

Employer's earnings = [50 * (effort chosen by employee B) * 0.10]

if effort >0, while employer's earnings = 0 if effort = 0.

Table 14 reports the earnings (in ECUs) for the employer when employee B is selected for each effort level.

Chosen effort	0	1	2	3	4	5	6	7	8	9	10
Income of employer if B is selected	0	5	10	15	20	25	30	35	40	45	50

Table 14: Earnings (in ECUs) for the employer when employee B is selected

Please note that in both cases, the employer's earnings increase with higher effort levels. For example,

- when the [employer] [*RDT*: random mechanism] selects employee A and
 - chooses effort = 0, the earnings for the employer are 0 ECUs;
 - if instead he chooses effort =5, the earnings for the employer are 27.5 ECUs.
 - if instead he chooses effort =9, the earnings for the employer are 47.5 ECUs.
- When the [employer] [*RDT*: random mechanism] selects employee B and employee B:
 - chooses effort = 3, the earnings for the employer are 15 ECUs;
 - if instead he chooses effort =6, the earnings for the employer are 30 ECUs.
 - if instead he chooses effort =8, the earnings for the employer are 40 ECUs.

Please note that the numbers used in all the examples were selected arbitrarily. They are not intended to suggest how you might decide.

Earnings for the selected employee:

Once the [employer] [*RDT*: random mechanism] chooses the employee, the selected employee chooses the effort to exert and consequently his earnings as shown in Table 15:

Effort	0	1	2	3	4	5	6	7	8	9	10
Income of chosen empl.	0	50	49	48	46	44	42	40	38	35	32

Table 15: Earnings (in ECUs) for the employee

For example,

- when the selected employee:
 - chooses effort=2, his earnings are 49 ECUs
 - chooses effort = 5, his earnings are 44 ECUs; if instead
 - he chooses effort =8, his earnings are 38 ECUs.

Earnings of the non-selected employee: The employee who is not selected receives an unemployment benefit equal to 10 ECUs.

D.1.6 What happens next?

- Before the experiment starts, on the next screens, you will be asked to answer a few questions.
- When the experiment starts, you will be informed about whether you are an employer or an employee in this experiment. In case you are an employee, it will be specified whether you are employee A or employee B.

D.1.7 Summary

We will now briefly summarize the content of the instructions you have just read. At the beginning of the experiment, you will be randomly matched with two other participants to form a group of three, and you will be randomly assigned a role within this group which we will call “firm.” You will be either the employer or employee A, or employee B.

The structure of decision making within each firm is as follows.

- First, the [**CT**, **ST** employer] [**RDT**: random mechanism] chooses to hire one of the employees. The employer’s earnings increase with higher effort levels of the selected employee.
- Next, the selected employee learns that he has been chosen. He then chooses an effort level (Effort). The selected employee’s earnings decrease with higher effort.
- The non-selected employee receives an unemployment benefit = 10 ECUs

Please note that the decision task of this part of the experiment will be performed only once. Please, raise your hand if you have any questions.

D.1.8 Hypothetical examples for demonstration purposes

- Assume that the [**CT**, **ST**: employer] [**RDT**: random mechanism] chooses employee B. employee B chooses the effort = 9. This situation results in the following earnings:
 - employer’s earnings: The employer receives revenue from the effort of employee A, i.e.: $50 \cdot 9 \cdot 0.10 = 45$ ECUs. The earnings of the employer are 45 ECUs.
 - employee A’s earnings: employee A receives an unemployment benefit of 10 ECUs. The earnings of employee A are 10 ECUs.

- employee B's earnings: employee B receives a wage of 50 ECUs and chooses an effort = 9. The earnings of employee B are 35 ECUs.
- Assume that [*CT, ST*: employer] [*RDT*: random mechanism] chooses employee A. employee A chooses the effort = 8. This situation results in the following earnings:
 - Employer's earnings: The employer receives revenue from the effort of employee A, i.e.: $50 \cdot (8 + 0.5) \cdot 0.10 = 42.5$ ECUs. The earnings of the employer are 42.5 ECUs.
 - employee A's earnings: employee A receives a wage of 50 ECUs and chooses an effort = 8. The earnings of employee A are 38 ECUs.
 - employee B's earnings: employee B receives an unemployment benefit of 10 ECUs. The earnings of employee B are 10 ECUs.

D.1.9 Control questions

The questions on the next screens will help us to know whether you understood the instructions. Attention: the numbers are chosen randomly. They should not suggest to you a way of playing the game.

- Think about the role of the employer.
 1. How much is the income of the employer when he selects employee A, and employee A chooses an effort of 2?
 2. How much is the income of the employer when he selects employee B, and employee B chooses an effort of 9?
- Think about the role of employee A.
 1. How much is the income of employee A when he is selected by the employer and chooses an effort of 6?
 2. How much is the income of employee A when he is selected by the employer and chooses an effort of 0?
- Think about the role of employee B.
 1. How much is the income of employee B when he is selected by the employer and chooses an effort of 8?
 2. How much is the income of employee B when he is selected by the employer and chooses an effort of 1?