Fairness properties of compensation schemes

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March 4, 2020

Abstract
We study the effect of different properties of incentive schemes on their perceived fairness in a large-scale online survey. Participants rate compensation schemes for a real effort task, where we vary the degree of inequality between workers, the presence of competition, the existence of time bonuses or handicaps, and the presence of a continuous relationship between effort and payment. To implement these aspects, we consider three main categories of contracts: piece rate, bonus and tournament schemes. The specific properties strongly affect the fairness perceptions of a scheme. We find that the induced level of inequality has a clearly negative effect on perceived fairness. Given the same degree of inequality, people judge piece rate schemes as more fair than those including bonus or tournament elements.

KEYWORDS: incentives, contract design, fairness, inequality.

JEL CLASSIFICATIONS: C90, D63, J31, J41

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1. Introduction

Because of the existence asymmetric information, incentive contracts are a key feature of any modern governance structure. Depending on the observability of agents' types and behavior, and the contractibility of outcomes, diverse bonus and tournament incentive schemes can be designed that mitigate the agency problem. However, while theoretical analyses can account for agents' utility of monetary consequences and for some specific aspects of social preferences (e.g., inequality aversion), more general aspects of fairness will not typically be captured when optimizing incentive schemes to induce a certain kind of behavior. Such fairness perceptions in employment relations may be relevant for softer governance aspects, such as worker morale in an organization (Greenberg, 1987), or, on a larger scale, for social cohesion and political preferences. Incentive contracts may thus have unintended consequences by negatively affecting fairness perceptions of social relationships, leading to unintended side effects and harmful behavior, as e.g. lower productivity by less motivated workers (Murayama and Elliot, 2012, for a meta-analysis on the relationship between competition and performance), or cheating and sabotage in competitive environments and those with steep incentives (e.g. Harbring et al., 2007).

The current study sets out to systematically examine how different properties of an incentive scheme affect its fairness perceptions. For this purpose, we conduct a vignette study on Amazon's Mturk platform in which subjects rated the fairness of specific incentive schemes in a between-subject design. We provide participants the description of a repeated time-constrained real effort task and the skill distribution in the task, based on previous lab experiments (Fehr, Rau, Trautmann, and Xu, 2020). Across raters we then vary the description of the payment scheme and ask for their fairness judgment. We consider three classes of incentive schemes: continuous piece rate incentives, step level incentives that pay a bonus when surpassing a threshold performance level, and tournaments with two workers pitted against each other. Within each class, we vary the degree of inequality (steepness of the incentives). Additionally, we consider time bonuses and handicaps as a function of earlier performance in the step-level and

tournament incentive scheme.

Using assessments of an abstract real-effort task makes it less likely that raters' perceptions are driven by uncontrolled aspects of incentive schemes in real-world labor relationships. It also allows for a controlled manipulation of the different properties of the incentive schemes within one conceptual framework. We describe the task in the next section. Results are given in Section 3. Section 4 discusses our results.

2. Study Design

2.1. Task Scenario

In all conditions, subjects first received the same general description of the real effort task: There are groups of two workers, each presented with a screen showing 48 slider bars with the slider at the initial position at the far-left of the bar. The workers are asked to place as many of the sliders in the exact middle position of the bars within a given time (setup adapted from Gill and Prowse, 2012). They had to repeat the task four times. Subjects were informed that workers were paid depending on their success in the task, according to a payment scheme described to them later. They were shown screen shots of the task.

On the next screen, subjects received the description of the specific payment scheme. There were sixteen payments schemes, varied in a between-subject design. That is, each subject saw exactly one payment scheme scenario. The task and payment schemes were based on a previous laboratory experiment with real payments and were calibrated on the basis of worker performance in the previous experiment (for details, see Fehr, Rau, Trautmann, and Xu 2020). We varied the payment schemes to identify the effect of the different design features on fairness perceptions. In all conditions, the description of the payment schemes included example payoff calculations for an average worker, a worker belonging to the top 10% percentile and one belonging to the bottom 10%.[1] Values are taken from the laboratory experiment, applying the observed skill distribution to the respective payment scheme.

[1] For the performance, we gave the average value of all workers belonging to the respective category.

After reading the task description and the description of the payment scheme, subjects answered four questions probing the understanding of the payment scheme. These questions related to core aspects of the payment scheme, namely the expected earning for a high skilled versus a low skilled worker, and the time available for the slider task (which varies across conditions and workers). The questions aimed at assuring that subjects understood the task, the payment scheme, and its payoff-implications for high and low skilled workers. Subjects had to answer all questions correctly to proceed with the survey.

Once subjects correctly have answered all four questions about the payment scheme and earnings, they would proceed to a new screen, where they were asked to judge the fairness of the payment scheme. We reproduce the question here:

> Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).
>
> Completely unfair O O O O O O O O O O O Completely fair

2.2. Payment Schemes

There were 16 payment schemes in total, shown in Table 1. The table shows the implications of each payment scheme for average, the 10%, and bottom 10% workers. The Gini-coefficient is calculated on the basis of the top and bottom percentile payoffs. The exact wording of all conditions is provided in the online appendix. Note that the incentive contracts were design such that an average-skilled worker would earn approximately the same payment in all conditions.

2.2.1. Piece Rates

The first four conditions are individual (no interaction) piece-rate schemes. The piece rates differed with respect to the steepness of the incentives. The first scheme had a base payment and low piece rate, the second scheme had no base payment and a larger

piece rate, and the third scheme had an entrance fee and even larger piece rate. The fourth scheme had a non-linear, exponential mapping of the number of sliders correctly placed to payments, punishing low and average performance and rewarding high performance. The amount of time to complete each round of sliders was identical and fixed for all piece rate conditions at 120 seconds. The incentives

2.2.2. Step Level Bonus Incentives

The next six conditions involve step level bonus incentives: there is a small piece rate incentive, but as soon as a threshold number of correct sliders was attained, a substantial fixed bonus was added to the total earnings. We included these conditions because bonuses based on performance thresholds are an important aspect of real-world incentive schemes (for example in many companies, employees receive yearly bonuses for reaching certain performance targets). Moreover, the step level conditions form an important intermediate step to the tournament incentives discussed below. In the tournament, the other player's performance provides a threshold at which a worker's own earnings discontinuously change, depending on whether she performed better or worse than the other worker. In the step level schemes, this happens at the exogenously set step level. The six step level conditions differed with respect to the step size at the performance threshold (low vs. high). The payment schemes were calibrated in such a way that an average worker, who by some variance of her individual performance attains the threshold in two of the four rounds of work, the step level bonus schemes paid approximately the same earnings as the piece rate schemes. However, the payoff difference between high and low performers was amplified in the high step level condition.

The amount of time to complete each round of sliders was fixed at 120 seconds in the first two step-level conditions. In the other four conditions involving either high or low step levels, we added either a time bonus, or a time handicap, in later rounds, for successful performance in earlier rounds. The idea behind these conditions is that successful workers may either receive more resources, or receive less resources (related to the ratchet effect and higher demands on good performers), for future tasks.

2.2.2. Tournament Incentives

The last six conditions in Table 1 involve competitive tournament incentives for the two workers in a group. The better performing worker receives a larger prize than the worse performing worker in each round. In half of the six conditions there is a small difference and in the other half there is a large difference between the winner and loser prizes. The tournament incentives lead to income differences, and also to a situation where both workers are directly pitted against each other and income differences are potentially very salient.

Again, two tournament conditions involved a fixed time limit of 120 seconds, while four conditions involved the small or large tournament prize differences, but added either a time bonus, or a time handicap, in later rounds, for successful the winner of earlier rounds. Again, the idea behind these conditions is that successful workers may either receive more resources, or receive less resources (related to the ratchet effect and higher demands on good performers), for future tasks.

2.3. Participants and Data Collection

We conducted the experiment using the online labor market Amazon Mechanical Turk (MTurk). The MTurk is a platform that allows employers to have access to a diverse, on-demand, scalable workforce. Tasks posted by the employers are typically referred to as HITs (Human Intelligence Tasks), which consist of a short description of the task, the task requirement, as well as the expected payment for completing the task.

The advantage of using the MTurk is that its samples are more representative than samples consisting of college students (Berinsky et al., 2012) and thereby suitable for social surveys (see Horton et al., 2011; Paolacci et al., 2010). Furthermore, a number of evaluation studies of MTurk show that established findings of experimental studies and economic games can be reliably replicated (among others, Berinsky et al., 2012; Mullinix et al., 2015).

We recruited 2,431 U.S. residents to participate in our experiment (on average 152 participants per condition) with a payment of $0.50 for completing the task. Participants were randomly allocated to one of the sixteen experimental conditions. Our survey experiment is programmed in oTree (Chen et al., 2016). Participants proceeded through the experiment at their own pace. After providing their fairness judgments (see Section 2.1), they answered a demographic questionnaire and were then redirected to the payment screen at MTurk.

3. Results

Table 1 shows raw results. We first observe that on the 0-10 Likert scale, all payment schemes score larger than a value of 5. The highest scores are in the range of 8.5. That is, incentive contracts are not perceived as unfair per se. We also observe that there are substantial differences between conditions, with the tournament incentives with additional time benefits for the previous-round high performer perceived as least fair, and the low-incentive piece rate perceived as most fair. We next assess the contribution of the several incentive features to the overall fairness judgment.

Table 1. Summary of fairness consideration and earnings by payment scheme

Payment Scheme	Gini	Avg. earnings	Top 10% earnings	Bottom 10% earnings	Fairness judgment
Piece-rate:					
Low_with base pay	0.17	6.40	7.48	5.32	8.51
Medium_no base pay	0.45	6.40	9.28	3.52	8.47
High_with entrance fee	0.90	6.00	11.40	0.60	7.02
Extreme (exponential)	0.91	6.08	25.84	1.28	7.50
Step-function:					
Low	0.17	6.84	7.92	5.68	7.83
High	0.87	6.64	12.32	0.88	7.17
Low_time bonus	0.17	6.84	7.92	5.68	7.19
High_time bonus	0.87	6.64	12.32	0.88	7.17
Low_time handicap	0.17	6.84	7.92	5.68	6.81
High_time handicap	0.87	6.64	12.32	0.88	6.71
Tournament:					
Low	0.18	6.80	8.00	5.60	8.41
High	0.82	6.60	12.00	1.20	6.59
Low_time bonus	0.18	6.80	8.00	5.60	6.55
High_time bonus	0.82	6.60	12.00	1.20	5.35
Low_time handicap	0.18	6.80	8.00	5.60	7.17
High_time handicap	0.82	6.60	12.00	1.20	6.55

Note: Low and high refers to the degree of inequality. Earnings are denoted in USD. Fairness evaluation is measured on a scale from 0 (completely unfair) to 10 (completely fair).

Table 2 shows the results of multivariate analyses of the fairness judgments. Our first explanatory variable of interest is the Gini coefficient measuring the expected outcome inequality of the payment scheme. We further include condition dummies for

step function and tournament incentives (piece rate is the reference category). We also include dummies for time bonus or handicap for the previous-round high performer. Finally, we include a dummy for the highly skewed exponential payoff mapping scheme in piece rate. Models 3 and 4 include interaction terms for the time bonus and handicap, to test if bonuses and handicaps are perceived differently in individual level step incentives compared to tournament incentives. Models 1 and 3 do not include any other covariates, while models 2 and 4 include demographic controls.

Table 2. Multivariate analyses of fairness rating

Fairness judgment	(1)	(2)	(3)	(4)
Gini	-1.33***	-1.30***	-1.32***	-1.28***
	(0.17)	(0.17)	(0.16)	(0.17)
Step-level incentives	-0.32**	-0.24	-0.52***	-0.45***
	(0.15)	(0.15)	(0.17)	(0.17)
Tournament	-0.74***	-0.70***	-0.55***	-0.51***
	(0.14)	(0.15)	(0.16)	(0.17)
Time bonus	-0.94***	-0.99***	-0.28	-0.28
	(0.16)	(0.17)	(0.22)	(0.23)
Time handicap	-0.69***	-0.68***	-0.73***	-0.72***
	(0.15)	(0.16)	(0.22)	(0.23)
Tournament*Time bonus			-1.29***	-1.39***
			(0.31)	(0.33)
Tournament*Time handicap			0.07	0.10
			(0.30)	(0.31)
Exponential scheme	-0.02	0.01	-0.02	-0.01
	(0.19)	(0.21)	(0.19)	(0.20)
Constant	8.72***	8.61***	7.64***	8.59***
	(0.10)	(0.32)	(0.59)	(0.32)
Controls	No	Yes	No	Yes
Observations	2,431	2,182	2,431	2,182
R-squared	0.08	0.12	0.08	0.13
F-statistics (D_step=D_tournament)	10.16***	11.69***	0.02	0.08
F-statistics (D_timebonus = D_timehandicap)	2.27	3.27*	3.60*	3.26*

Notes: OLS regression on fairness rating. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Controls include gender, level of education, personal income (categorical), ethnic groups, dummy for living in rural area, political orientation (1: Liberal; 6: Conservative), self-perceived social ladder, and employment status. Excluded categories are piece rate and no-time bonus / time handicap.

Table 2 shows that all design features of the contracts that have an effect on fairness lead to lower fairness judgments compared to the low-incentive piece rate contract. Inequality as measured by the Gini coefficient is an important factor affecting fairness views across all conditions. Throughout all conditions, the Gini coefficient is strongly negatively correlated with the fairness rating. Step level bonuses and tournament incentives compare negatively with the piece rate conditions. A comparison between Models 1 and 2 with 3 and 4 shows that time handicaps for successful workers are not considered fair in any condition. In contrast, time bonuses are judged neutrally in individual level step-level bonuses, but strongly negatively in the case of tournament conditions. The latter effect is remarkable, as many tournament-like settings involve better resources for successful people (scholarships, grants, special training, networking opportunities).

We are also interested whether these results represent widely held views, or whether they differ strongly across demographic groups. Table 3 presents results of Model 4 separately for high- and low-income individuals, for politically conservative and liberal individuals, and for males and females. We observe that the above identified pattern of effects is very consistent across different groups. There are two noteworthy differences across groups. First, negative views of handicaps for successful workers seems to be driven predominantly by high income and conservative subjects. These subjects may perceive a violation of basic meritocratic principles. Second, negative views of tournament incentives seem to be driven predominantly be low income and male subjects. The effect of male subjects is a bit surprising, as there is a literature showing that females, in contrast to men, often avoid competitive situations and incentive schemes (Niederle and Vesterlund, 2007; Buser et al., 2014).

4. Conclusion

Incentive contracts are an important feature in many employment settings where asymmetric information prevents the payment of fix, output independent wages. Incentive contracts lead to inequality, success and failure, and often to competition

(Verhaeghe, 2014). We show how these issues subsequently affect fairness perceptions. In practical managerial and organizational settings, fairness perceptions will be relevant in determining employee satisfaction, theft and cooperation, and turnover. They need to be carefully monitored by the management to prevent unanticipated inefficiencies in employment relations. Incentive-benefits need to be traded off against unintended side effects due to violation of employees' fairness norms.

Table 3. Fairness view analyses by income, political view, and gender

	Income		Political view		Gender	
	(1)	(2)	(3)	(4)	(5)	(6)
	High	Low	Conservative	Liberal	Female	Male
Gini	-1.08***	-1.48***	-1.03***	-1.41***	-1.25***	-1.26***
	(0.24)	(0.25)	(0.28)	(0.21)	(0.25)	(0.24)
Step-level incentives	-0.12	-0.76***	-0.12	-0.62***	-0.50*	-0.45**
	(0.23)	(0.25)	(0.27)	(0.22)	(0.26)	(0.23)
Tournament	-0.19	-0.83***	-0.66**	-0.44**	-0.28	-0.68***
	(0.14)	(0.24)	(0.27)	(0.21)	(0.23)	(0.24)
Time bonus	-0.28	-0.35	-0.09	-0.40	-0.29	-0.27
	(0.32)	(0.32)	(0.35)	(0.29)	(0.33)	(0.31)
Time handicap	-1.14***	-0.29	-1.43***	-0.28	-0.61*	-0.75**
	(0.31)	(0.33)	(0.36)	(0.29)	(0.31)	(0.33)
Tournament*Time bonus	-1.30***	-1.47***	-1.66***	-1.16***	-1.77***	-1.03**
	(0.45)	(0.48)	(0.52)	(0.42)	(0.46)	(0.46)
Tournament*Time handicap	0.39	-0.21	0.70	-0.31	-0.61*	0.45
	(0.44)	(0.45)	(0.54)	(0.39)	(0.31)	(0.46)
Exponential scheme	0.31	-0.34	0.13	-0.11	-0.21	0.10
	(0.27)	(0.31)	(0.31)	(0.27)	(0.34)	(0.25)
Constant	8.53***	9.03***	8.72***	9.38***	8.96***	8.44***
	(0.49)	(0.43)	(0.49)	(0.39)	(0.43)	(0.46)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,102	1,080	794	1,388	1,033	1,142
R-squared	0.11	0.15	0.11	0.12	0.14	0.12

Notes: OLS regression on fairness rating. High/Low income, Conservative/Liberal are median split. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Controls include gender, level of education, personal income (categorical, not included in regression (1) and (2)), ethnic groups, dummy for living in rural area, political orientation (1: Liberal; 6: Conservative, not included in regression (3) and (4)), self-perceived social ladder, and employment status. Results are robust with or without control variables.

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Online Appendix

General Instruction

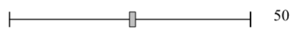
Dear participant,

Thank you for taking part of the questionnaire. Please first read all information carefully, and then answer the question.

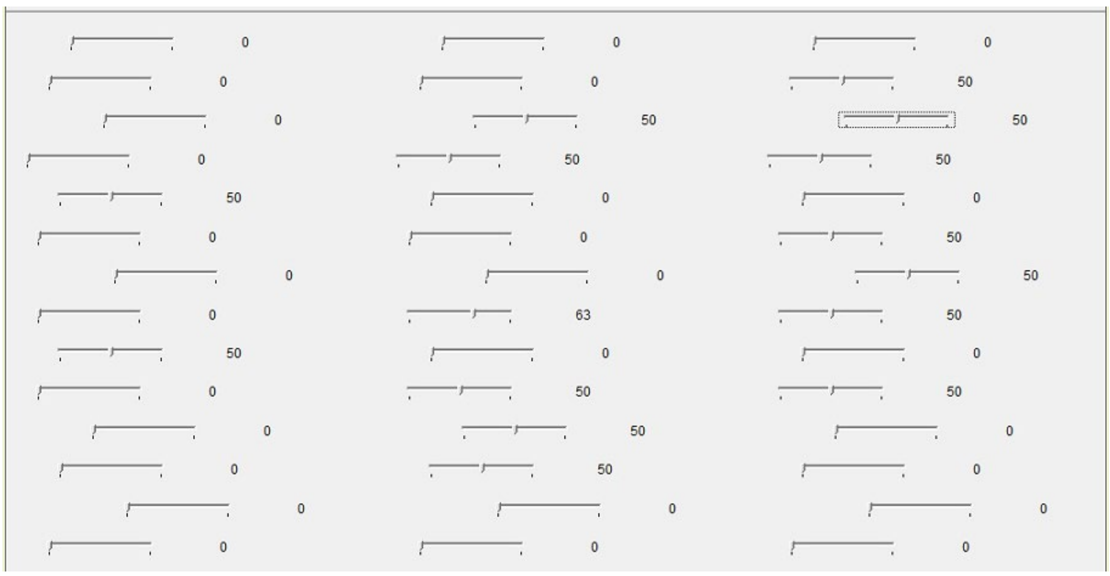
Two workers have to perform a task on a computer. They will be paid according to some payment scheme, which will be described in detail later. The task requires the workers to place a slider in the central position of a slider bar. The slider initially appears at the far-left position in the bar. One has to use the mouse to move the slider to the target position.

Initial position:

Target position:



The keyboard has been disabled in order to make the task sufficiently challenging. The task consists of 48 sliders to be correctly placed. Placing 48 sliders within a time limit (described later) is called a round.   The task is repeated for ***four*** rounds. The actual screen the workers have seen is like the following.



Payment scheme: Piece rate

Low inequality with base pay (Low_with base pay)

The payment mechanism is as follows:

Both workers perform the task individually and independently. The time limit per round to work on the sliders is 120 seconds. For each correctly positioned slider within the time limit per round, workers receive $0.03. Additionally, they also receive $1 each round for participating in the task. Their payment per round can be summarized as $1 + $0.03 × (Number of sliders).

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. An average-skilled worker would, therefore, receive $1.60 (=$0.03*20 + $1) per round. The total earnings after four rounds would be $6.40 (=$1.60*4) for an average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $1.87 (=$0.03*29+$1) per round, or $7.48 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $1.33 (=$0.03*11+$1) per round, or $5.32 in total. Thus, the difference in total earnings between the two workers is $2.16 after four rounds if one worker is skilled and the other is not. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.

What are the round 1 earnings of worker A (in $)? _____ {1.39}

What are the round 1 earnings of worker B (in $)? _____ {1.81}

How many seconds does worker A have available for the task in round 2? _____ {120}

How many seconds does worker B have available for the task in round 2? _____ {120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Piece rate

Medium inequality without base pay (Medium_no base pay)

The payment mechanism is as follows:

Both workers perform the task individually and independently. The time limit per round to work on the sliders is 120 seconds. For each correctly positioned slider within the time limit per round, workers receive $0.08. Their payment per round can be summarized as $0.08 × (Number of sliders).

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. An average-skilled worker would, therefore, receive $1.60 (=$0.08*20) per round. The total earnings after four rounds would be $6.40 (=$1.60*4) for an average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $2.32 (=$0.08*29) per round, or $9.28 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $0.88 (=$0.08*11) per round, or $3.52 in total. Thus, the difference in total earnings between the two workers is $5.76 after four rounds if one worker is skilled and the other is not. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.04}
What are the round 1 earnings of worker B (in $)? _____ {2.16}

How many seconds does worker A have available for the task in round 2? _____
{120}
How many seconds does worker B have available for the task in round 2? _____
{120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Piece rate

High inequality without base pay but with an entrance fee (High_with entrance fee)

The payment mechanism is as follows:

Both workers perform the task individually and independently. The time limit per round to work on the sliders is 120 seconds. The task requires a mandatory participation fee of $6 to be paid by each worker (or $1.50 per round). For each correctly positioned slider within the time limit per round, workers receive $0.15. Their payment per round can be summarized as $0.15×(Number of sliders).

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. An average-skilled worker would, therefore, receive $1.50 (=$0.15*20-$1.50) per round. The total earnings after four rounds would be $6 (=$1.50*4) for an average-skilled worker (already accounting for the participation fee).

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $2.85 (=$0.15*29-$1.50) per round, or $11.40 in total (already accounting for the participation fee). The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $0.15 (=$0.15*11-$1.50) per round, or $0.60 in total (already accounting for the participation fee). Thus, the difference in total earnings between the two workers is $10.80 after four rounds if one worker is skilled and the other is not. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1. Please take into account the entrance fee of $1.50 per round.
What are the round 1 earnings of worker A (in $)? _____ {0.45}
What are the round 1 earnings of worker B (in $)? _____ {2.55}

How many seconds does worker A have available for the task in round 2? _____
{120}
How many seconds does worker B have available for the task in round 2? _____
{120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely

fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Piece rate

Extreme inequality, no base pay, no entrance fee, exponential reward function (Extreme)

The payment mechanism is as follows:

Both workers perform the task individually and independently. The time limit per round to work on the sliders is 120 seconds. The total earnings for the task in a round depend on the number of sliders workers can correctly place within the time limit, which is summarized in the table below. The upper rows show the number of correctly placed sliders and the lower rows show the total payoffs in dollar.

Sliders	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Total Payoffs	0.01	0.03	0.04	0.06	0.08	0.11	0.14	0.17	0.21	0.26	0.32	0.38
Sliders	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Total Payoffs	0.46	0.55	0.66	0.78	0.92	1.09	1.29	1.52	1.79	2.11	2.48	2.91
Sliders	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**
Total Payoffs	3.42	4.01	4.70	5.52	6.46	7.58	8.87	10.39	12.17	14.25	16.69	19.54
Total Sliders	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**
Payoffs	22.87	26.77	31.34	36.67	42.92	50.23	58.78	68.78	80.49	94.18	110.21	128.95

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. An average-skilled worker would therefore receive $1.52 per round for doing the task (see the table). The total earnings after four rounds would be $6.08 for an average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $6.46 (see table) per round, or $25.84 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $0.32 (see table) per round, or $1.28 in total. Thus, the difference in total earnings between the two workers is $24.56 after four rounds if one worker is skilled and the other is not. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {0.46}
What are the round 1 earnings of worker B (in $)? _____ {4.70}

How many seconds does worker A have available for the task in round 2? _____ {120}
How many seconds does worker B have available for the task in round 2? _____ {120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Step function
Small inequality, no time bonus, no time handicap (Low)

The payment mechanism is as follows:

Both workers perform the task individually and independently. The time limit per round to work on the sliders is 120 seconds. For each correctly positioned slider within the time limit per round, workers receive $0.02. Additionally, in each round, there will also be a bonus payment of $1.40 if a worker correctly positioned 21 sliders or more. If the total number of sliders placed is below 21, then the bonus payment is $1.20.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. If an average-skilled worker just manages to place 21 sliders in a round, his payoff would be $1.82 (=$0.02*21+$1.40) this round. If, on the other hand, he just fails to get 21 sliders in a round, his payoff would be $1.60 (=$0.02*20+$1.20) for this round. Suppose that he manages to correctly place 21 sliders in two rounds, but only places 20 sliders in the other two rounds. The total earnings after four rounds would then be $6.84 (=$1.82*2+$1.60*2) for the average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $1.98 (=$0.02*29+$1.40) per round, or $7.92 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $1.42 (=$0.02*11+$1.20) per round, or $5.68 in total. Thus, the difference in total earnings between the two workers is $2.24 after four rounds if one worker is skilled and the other is not. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.46}
What are the round 1 earnings of worker B (in $)? _____ {1.94}

How many seconds does worker A have available for the task in round 2? _____
{120}
How many seconds does worker B have available for the task in round 2? _____
{120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described

mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Step function
High inequality, no time bonus, no time handicap (High)

The payment mechanism is as follows:

Both workers perform the task individually and independently. The time limit per round to work on the sliders is 120 seconds. For each correctly positioned slider within the time limit per round, workers receive $0.02. Additionally, in each round, there will also be a bonus payment of $2.50 if a worker correctly positioned 21 sliders or more. If the total number of sliders placed is below 21, then the bonus payment is $0.00.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. If an average-skilled worker just manages to place 21 sliders in a round, his payoff would be $2.92 (=$0.02*21+$2.50) this round. If, on the other hand, he just fails to get 21 sliders in a round, his payoff would be $0.40 (=$0.02*20) for this round. Suppose that he manages to correctly place 21 sliders in two rounds, but only places 20 sliders in the other two rounds. The total earnings after four rounds would then be $6.64 (=$2.92*2+$0.40*2) for the average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $3.08 (=$0.02*29+$2.50) per round, or $12.32 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $0.22 (=$0.02*11) per round, or $0.88 in total. Thus, the difference in total earnings between the two workers is $11.44 after four rounds if one worker is skilled and the other is not. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {0.26}
What are the round 1 earnings of worker B (in $)? _____ {3.04}

How many seconds does worker A have available for the task in round 2? _____
{120}
How many seconds does worker B have available for the task in round 2? _____
{120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please

indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Step function

Low inequality, with time bonus (Low_time bonus)

The payment mechanism is as follows:

Both workers perform the task individually and independently. For each correctly positioned slider within the time limit per round, workers receive $0.02. Additionally, in each round, there will also be a bonus payment of $1.40 if a worker correctly positioned 21 sliders or more. If the total number of sliders placed is below 21, then the bonus payment is $1.20.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, if the worker correctly places 21 or more sliders, 6 seconds are added to his current time budget. If the worker correctly places less than 21 sliders, 6 seconds are subtracted from his current time budget. See the example for illustration.

Example: A worker places 20 sliders correctly in round 1. His time budget in round 2 will be 114 seconds. In round 2 he then places 21 sliders correctly. His time budget in round 3 will be 120 seconds. In round 3 he then places 22 sliders correctly. His time budget in round 4 will be 126 seconds.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place many sliders and to reach the threshold for the bonus payment, in subsequent rounds.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. If an average-skilled worker just manages to place 21 sliders in a round, his payoff would be $1.82 (=$0.02*21+$1.40) this round. If, on the other hand, he just fails to get 21 sliders in a round, his payoff would be $1.60 (=$0.02*20+$1.20) for this round. Suppose that he manages to correctly place 21 sliders in two rounds, but only places 20 sliders in the other two rounds. The total earnings after four rounds would then be $6.84 (=$1.82*2+$1.60*2) for the average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $1.98 (=$0.02*29+$1.40) per round, or $7.92 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $1.42 (=$0.02*11+$1.20) per round, or $5.68 in total. Thus, the difference in total earnings between the two workers is $2.24 after four rounds if one worker is skilled and the other is not.

Note that these calculations do not account for increased or reduced time budgets due to managing or not managing to reach the threshold of 21 sliders in earlier rounds. This will lead, on average, to larger numbers of sliders compared to the number for 120 seconds for those with more time after passing the threshold, and on average lower numbers of sliders compared to the number for 120 seconds for those with less time after not passing the threshold. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.46}
What are the round 1 earnings of worker B (in $)? _____ {1.94}

How many seconds does worker A have available for the task in round 2? _____ {114}
How many seconds does worker B have available for the task in round 2? _____ {126}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Step function
High inequality, with time bonus (High_time bonus)

The payment mechanism is as follows:

Both workers perform the task individually and independently. For each correctly positioned slider within the time limit per round, workers receive $0.02. Additionally, in each round, there will also be a bonus payment of $2.50 if a worker correctly positioned 21 sliders or more. If the total number of sliders placed is below 21, then the bonus payment is $0.00.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, if the worker correctly places 21 or more sliders, 6 seconds are added to his current time budget. If the worker correctly places only less than 21 sliders, 6 seconds are subtracted from his current time budget. See the example for illustration.

Example: A worker places 20 sliders correctly in round 1. His time budget in round 2 will be 114 seconds. In round 2 he then places 21 sliders correctly. His time budget in round 3 will be 120 seconds. In round 3 he then places 22 sliders correctly. His time budget in round 4 will be 126 seconds.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place many sliders and to reach the threshold for the bonus payment, in subsequent rounds.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. If an average-skilled worker just manages to place 21 sliders in a round, his payoff would be $2.92 (=$0.02*21+$2.50) this round. If, on the other hand, he just fails to get 21 sliders in a round, his payoff would be $0.40 (=$0.02*20) for this round. Suppose that he manages to correctly place 21 sliders in two rounds, but only places 20 sliders in the other two rounds. The total earnings after four rounds would then be $6.64 (=$2.92*2+$0.40*2) for the average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $3.08 (=$0.02*29+$2.50) per round, or $12.32 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $0.22 (=$0.02*11) per round, or $0.88 in total. Thus, the difference in total earnings between the two workers is $11.44 after four rounds if one worker is skilled and the other is not.

Note that these calculations do not account for increased or reduced time budgets due to managing or not managing to reach the threshold of 21 sliders in earlier rounds. This will lead, on average, to larger numbers of sliders compared to the number for 120 seconds for those with more time after passing the threshold, and on average lower numbers of sliders compared to the number for 120 seconds for those with less time after not passing the threshold. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {0.26}
What are the round 1 earnings of worker B (in $)? _____ {3.04}

How many seconds does worker A have available for the task in round 2? _____ {114}
How many seconds does worker B have available for the task in round 2? _____ {126}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Step function

Low inequality, with time handicap (Low_time handicap)

The payment mechanism is as follows:

Both workers perform the task individually and independently. For each correctly positioned slider within the time limit per round, workers receive $0.02. Additionally, in each round, there will also be a bonus payment of $1.40 if a worker correctly positioned 21 sliders or more. If the total number of sliders placed is below 21, then the bonus payment is $1.20.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, if the worker correctly places 21 or more sliders, 6 seconds are subtracted from his current time budget, a time handicap. If the worker correctly places less than 21 sliders, 6 seconds are added to his current time budget, a time benefit. See the example for illustration.

Example: A worker places 20 sliders correctly in round 1. His time budget in round 2 will be 126 seconds. In round 2 he then places 21 sliders correctly. His time budget in round 3 will be 120 seconds. In round 3 he then places 22 sliders correctly. His time budget in round 4 will be 114 seconds.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place many sliders and to reach the threshold for the bonus payment, in subsequent rounds.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. If an average-skilled worker just manages to place 21 sliders in a round, his payoff would be $1.82 (=$0.02*21+$1.40) this round. If, on the other hand, he just fails to get 21 sliders in a round, his payoff would be $1.60 (=$0.02*20+$1.20) for this round. Suppose that he manages to correctly place 21 sliders in two rounds, but only places 20 sliders in the other two rounds. The total earnings after four rounds would then be $6.84 (=$1.82*2+$1.60*2) for the average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $1.98 (=$0.02*29+$1.40) per round, or $7.92 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $1.42 (=$0.02*11+$1.20) per round, or $5.68 in total. Thus, the difference in total earnings between the two workers is $2.24 after four rounds if one worker is skilled and the other is not.

Note that these calculations do not account for increased or reduced time budgets due to managing or not managing to reach the threshold of 21 sliders in earlier rounds. This will lead, on average, to lower numbers of sliders compared to the number for 120 seconds for those with less time after passing the threshold, and on average larger numbers of sliders compared to the number for 120 seconds for those with more time after not passing the threshold. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.46}
What are the round 1 earnings of worker B (in $)? _____ {1.94}

How many seconds does worker A have available for the task in round 2? _____ {126}
How many seconds does worker B have available for the task in round 2? _____ {114}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Step function
High inequality, with time handicap (High_time handicap)

The payment mechanism is as follows:

Both workers perform the task individually and independently. For each correctly positioned slider within the time limit per round, workers receive $0.02. Additionally, in each round, there will also be a bonus payment of $2.50 if a worker correctly positioned 21 sliders or more. If the total number of sliders placed is below 21, then the bonus payment is $0.00.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, if the worker correctly places 21 or more sliders, 6 seconds are subtracted from his current time budget, a time handicap. If the worker correctly places less than 21 sliders, 6 seconds are added to his current time budget, a time benefit. See the example for illustration.

Example: A worker places 20 sliders correctly in round 1. His time budget in round 2 will be 126 seconds. In round 2 he then places 21 sliders correctly. His time budget in round 3 will be 120 seconds. In round 3 he then places 22 sliders correctly. His time budget in round 4 will be 114 seconds.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place many sliders and to reach the threshold for the bonus payment, in subsequent rounds.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. If an average-skilled worker just manages to place 21 sliders in a round, his payoff would be $2.92 (=$0.02*21+$2.50) this round. If, on the other hand, he just fails to get 21 sliders in a round, his payoff would be $0.40 (=$0.02*20) for this round. Suppose that he manages to correctly place 21 sliders in two rounds, but only places 20 sliders in the other two rounds. The total earnings after four rounds would then be $6.64 (=$2.92*2+$0.40*2) for the average-skilled worker.

The most skilled workers (top 10%) can place about 29 sliders in 120 seconds on average, amounting to a payment of $3.08 (=$0.02*29+$2.50) per round, or $12.32 in total. The least skilled workers (bottom 10%) can place about 11 sliders in 120 seconds on average, amounting to a payment of $0.22 (=$0.02*11) per round, or $0.88 in total. Thus, the difference in total earnings between the two workers is $11.44 after four rounds if one worker is skilled and the other is not.

Note that these calculations do not account for increased or reduced time budgets due to managing or not managing to reach the threshold of 21 sliders in earlier rounds. This will lead, on average, to lower numbers of sliders compared to the number for 120 seconds for those with less time after passing the threshold, and on average larger numbers of sliders compared to the number for 120 seconds for those with more time after not passing the threshold. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {0.26}
What are the round 1 earnings of worker B (in $)? _____ {3.04}

How many seconds does worker A have available for the task in round 2? _____ {126}
How many seconds does worker B have available for the task in round 2? _____ {114}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Tournament
Small inequality, no time bonus, no time handicap (Low)

The payment mechanism is as follows:

The two workers form a competitive group. That is, the goal of the workers in each round is to put a larger number of sliders to the target position within the given time limit than the other worker in the group. The time limit per round to work on the sliders is 120 seconds. The worker who placed more sliders in a group is the winner of this round. It does not matter how large the difference actually is, it only matters who of the two workers positioned more sliders correctly. In each of the four rounds, the winner of the round receives $2. The loser receives $1.40. In case of a tie where both players have the same number of correctly positioned sliders, the winner for this round will be randomly determined.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. How much a worker can earn per round depends on his own performance, the performance of his opponent, and in the event of a tie, a flip of a coin. If both workers in a group win two of the four rounds, then each would receive $6.80 (=$2*2+$1.40*2).

The most skilled workers (top 10%) can place about 29 sliders per round on average, while the least skilled workers (bottom 10%) can place about 11 sliders per round on average. If a worker wins four rounds in a row, then he can earn $8 (=$2*4), while his opponent earns $5.60 (=$1.40*4), a difference of $2.40 after four rounds. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.40}
What are the round 1 earnings of worker B (in $)? _____ {2.00}

How many seconds does worker A have available for the task in round 2? _____ {120}
How many seconds does worker B have available for the task in round 2? _____ {120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described

mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Tournament
High inequality, no time bonus, no time handicap (High)

The payment mechanism is as follows:

The two workers form a competitive group. That is, the goal of the workers in each round is to put a larger number of sliders to the target position within the given time limit than the other worker in the group. The time limit per round to work on the sliders is 120 seconds. The worker who placed more sliders in a group is the winner of this round. It does not matter how large the difference actually is, it only matters who of the two workers positioned more sliders correctly. In each of the four rounds, the winner of the round receives $3. The loser receives $0.30. In case of a tie where both players have the same number of correctly positioned sliders, the winner for this round will be randomly determined.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. How much a worker can earn per round depends on his own performance, the performance of his opponent, and in the event of a tie, a flip of a coin. If both workers in a group win two of the four rounds, then each would receive $6.60 (=$3*2+$0.30*2).

The most skilled workers (top 10%) can place about 29 sliders per round on average, while the least skilled workers (bottom 10%) can place about 11 sliders per round on average. If a worker wins four rounds in a row, then he can earn $12 (=$3*4), while his opponent earns $1.20 (=$0.30*4), a difference of $10.80 after four rounds. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {0.30}
What are the round 1 earnings of worker B (in $)? _____ {3.00}

How many seconds does worker A have available for the task in round 2? _____
{120}
How many seconds does worker B have available for the task in round 2? _____
{120}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please

indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Tournament

Low inequality, with time bonus (Low_time bonus)

The payment mechanism is as follows:

The two workers form a competitive group. That is, the goal of the workers in each round is to put a larger number of sliders to the target position within the given time limit than the other worker in the group. The worker who placed more sliders in a group is the winner of this round. It does not matter how large the difference actually is, it only matters who of the two workers positioned more sliders correctly. In each of the four rounds, the winner of the round receives $2. The loser receives $1.40. In case of a tie where both players have the same number of correctly positioned sliders, the winner for this round will be randomly determined.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, for the winner, 6 seconds are added to his current time budget. For the loser, 6 seconds are subtracted from his current time budget. See the example for illustration.

Example: Worker A places more sliders correctly in round 1 than worker B. His time budget in round 2 will be 126 seconds, worker B's time budget will be 114 seconds. In round 2 worker A again places more sliders correctly than worker B. His time budget in round 3 will be 132 seconds, worker B's time budget will be 108 seconds. In round 3, worker A now places less sliders correctly than worker B. His time budget in round 4 will be 126 seconds, worker B's time budget will be 114.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place more sliders than the opponent.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. How much a worker can earn per round depends on his own performance, the performance of his opponent, and in the event of a tie, a flip of a coin. If both workers in a group win two of the four rounds, then each would receive $6.80 (=$2*2+$1.40*2).

The most skilled workers (top 10%) can place about 29 sliders per round on average, while the least skilled workers (bottom 10%) can place about 11 sliders per round on average. If a worker wins four rounds in a row, then he can earn $8 (=$2*4), while his opponent earns $5.60 (=$1.40*4), a difference of $2.40 after four rounds. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

Note that these calculations do not account for increased or reduced time budgets due to winning or losing earlier rounds. This will lead, on average, to larger numbers of sliders compared to the number for 120 seconds for those with more time, and on average lower numbers of sliders compared to the number for 120 seconds for those with less time. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.40}
What are the round 1 earnings of worker B (in $)? _____ {2.00}

How many seconds does worker A have available for the task in round 2? _____ {114}
How many seconds does worker B have available for the task in round 2? _____ {126}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Tournament

High inequality, with time bonus (High_time bonus)

The payment mechanism is as follows:

The two workers form a competitive group. That is, the goal of the workers in each round is to put a larger number of sliders to the target position within the given time limit than the other worker in the group. The worker who placed more sliders in a group is the winner of this round. It does not matter how large the difference actually is, it only matters who of the two workers positioned more sliders correctly. In each of the four rounds, the winner of the round receives $3. The loser receives $0.30. In case of a tie where both players have the same number of correctly positioned sliders, the winner for this round will be randomly determined.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, for the winner, 6 seconds are added to his current time budget. For the loser, 6 seconds are subtracted from his current time budget. See the example for illustration.

Example: Worker A places more sliders correctly in round 1 than worker B. His time budget in round 2 will be 126 seconds, worker B's time budget will be 114 seconds. In round 2 worker A again places more sliders correctly than worker B. His time budget in round 3 will be 132 seconds, worker B's time budget will be 108 seconds. In round 3, worker A now places less sliders correctly than worker B. His time budget in round 4 will be 126 seconds, worker B's time budget will be 114.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place more sliders than the opponent.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. How much a worker can earn per round depends on his own performance, the performance of his opponent, and in the event of a tie, a flip of a coin. If both workers in a group win two of the four rounds, then each would receive $6.60 (=$3*2+$0.30*2).

The most skilled workers (top 10%) can place about 29 sliders per round on average, while the least skilled workers (bottom 10%) can place about 11 sliders per round on average. If a worker wins four rounds in a row, then he can earn $12 (=$3*4), while his opponent earns $1.20 (=$0.30*4), a difference of $10.80 after four rounds. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

Note that these calculations do not account for increased or reduced time budgets due to winning or losing earlier rounds. This will lead, on average, to larger numbers of sliders compared to the number for 120 seconds for those with more time, and on average lower numbers of sliders compared to the number for 120 seconds for those with less time. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {0.30}
What are the round 1 earnings of worker B (in $)? _____ {3.00}

How many seconds does worker A have available for the task in round 2? _____ {114}
How many seconds does worker B have available for the task in round 2? _____ {126}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Tournament

Low inequality, with time handicap (Low_time handicap)

The payment mechanism is as follows:

The two workers form a competitive group. That is, the goal of the workers in each round is to put a larger number of sliders to the target position within the given time limit than the other worker in the group. The worker who placed more sliders in a group is the winner of this round. It does not matter how large the difference actually is, it only matters who of the two workers positioned more sliders correctly. In each of the four rounds, the winner of the round receives $2. The loser receives $1.40. In case of a tie where both players have the same number of correctly positioned sliders, the winner for this round will be randomly determined.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, for the winner, 6 seconds are subtracted from his current time budget, a time handicap. For the loser, 6 seconds are added to his current time budget, a time benefit. See the example for illustration.

Example: Worker A places more sliders correctly in round 1 than worker B. His time budget in round 2 will be 114 seconds, worker B's time budget will be 126 seconds. In round 2 worker A again places more sliders correctly than worker B. His time budget in round 3 will be 108 seconds, worker B's time budget will be 132 seconds. In round 3, worker A now places less sliders correctly than worker B. His time budget in round 4 will be 114 seconds, worker B's time budget will be 126.

In general, a shorter time budget to work on the task in a round makes it more difficult, and a longer time budget makes it less difficult, to correctly place more sliders than the opponent.

Our data containing more than 600 workers show that workers can correctly place about 20 sliders per round on average within a time limit of 120 seconds. How much a worker can earn per round depends on his own performance, the performance of his opponent, and in the event of a tie, a flip of a coin. If both workers in a group win two of the four rounds, then each would receive $6.80 (=$2*2+$1.40*2).

The most skilled workers (top 10%) can place about 29 sliders per round on average, while the least skilled workers (bottom 10%) can place about 11 sliders per round on average. If a worker wins four rounds in a row, then he can earn $8 (=$2*4), while his opponent earns $5.60 (=$1.40*4), a difference of $2.40 after four rounds. Note also that both workers know their own and the other worker's performance and payoffs in each round and in total.

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i) If all aspects of the task and the payment of workers are clear, please answer the following questions about the task:

Assume that worker A placed 13 sliders correctly and worker B placed 27 sliders correctly in round 1.
What are the round 1 earnings of worker A (in $)? _____ {1.40}
What are the round 1 earnings of worker B (in $)? _____ {2.00}

How many seconds does worker A have available for the task in round 2? _____ {126}
How many seconds does worker B have available for the task in round 2? _____ {114}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair

Payment scheme: Tournament
High inequality, with time handicap (High_time handicap)

The payment mechanism is as follows:

The two workers form a competitive group. That is, the goal of the workers in each round is to put a larger number of sliders to the target position within the given time limit than the other worker in the group. The worker who placed more sliders in a group is the winner of this round. It does not matter how large the difference actually is, it only matters who of the two workers positioned more sliders correctly. In each of the four rounds, the winner of the round receives $3. The loser receives $0.30. In case of a tie where both players have the same number of correctly positioned sliders, the winner for this round will be randomly determined.

The initial time limit in the first round is 120 seconds. Depending on performance, the time budget is reduced or increased in the subsequent round. In particular, for the winner, 6 seconds are subtracted from his current time budget, a time handicap. For the loser, 6 seconds are added to his current time budget, a time benefit. See the example for illustration.

Example: Worker A places more sliders correctly in round 1 than worker B. His time budget in round 2 will be 114 seconds, worker B's time budget will be 126 seconds. In round 2 worker A again places more sliders correctly than worker B. His time budget in round 3 will be 108 seconds, worker B's time budget will be 132 seconds. In round 3, worker A now places less sliders correctly than worker B. His time budget in round 4 will be 114 seconds, worker B's time budget will be 126.

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What are the round 1 earnings of worker A (in $)? _____ {0.30}
What are the round 1 earnings of worker B (in $)? _____ {3.00}

How many seconds does worker A have available for the task in round 2? _____
{126}
How many seconds does worker B have available for the task in round 2? _____
{114}

ii) Let us now consider the overall picture of the payment mechanism described above. Different payment mechanisms to reward people for their work may be considered more or less fair. We are interested in how people think about the above described mechanism. To what extent do you think this payment mechanism is fair? Please indicate your fairness judgment on a scale from 0 (completely unfair) to 10 (completely fair).

Completely unfair O O O O O O O O O O O Completely fair