

ONLINE APPENDIX

INSTRUCTIONS FOR PARTICIPANTS

In this section we present an English translation of the originally French instructions that the participants received before the experiment. There were separate instructions for employers and workers in each experiment. We first provide the version for employers and then the version for workers.

The black text corresponds to the Baseline instructions. The colored paragraphs include text that we added in the other versions of the experiment. The **blue** paragraphs were only present in the communication experiment, the **red** paragraphs were only present in the agreement experiment, and the **teal** paragraphs were only present in the grievance experiment. In some cases the added paragraphs changed the numeration in a list of paragraphs. In those cases the numeration of the colored paragraphs shows where the paragraphs were placed.

Instructions for Employers

Introduction

You are about to participate in an experiment of the University of Lausanne. During this experiment you have the opportunity to earn a sum of money that will be paid to you at the end of the experiment. The amount of money you earn may be more significant if

- you read the instructions carefully.
- you think carefully about the decisions you make.

If you have any questions while reading the instructions or while the experiment is in progress, feel free to call us by raising your hand. By contrast, any communication between participants—except through the channels offered as part of the experiment—is prohibited. In the event of non-compliance with these instructions, we will be obliged to exclude you from the experience without any payment.

In today's experiment, you will interact with other participants via your computer. The decisions you make will have an impact on your profit. Your decisions will also influence the profit of other participants, just as the decisions of other participants may influence your profit.

Your profit is calculated in points. At the end of the experiment your points will be converted into Swiss Francs according to the following exchange rate:

$$\mathbf{70 \text{ points} = 1 \text{ Swiss Franc}}$$

Regardless of your decisions in the experiment, you will also receive a fixed amount of CHF 10 for your participation.

The experiment consists of several identical rounds. At the end of the session, your remuneration will be calculated as the sum of your income obtained in all these rounds.

SUMMARY OF THE EXPERIMENT

There are two types of participants in today's experiment: employers and workers. Each participant is randomly assigned to one of the two roles.

You will be an **EMPLOYER** for the whole duration of the experiment.

The experiment consists of a total of 15 periods. At the beginning of each period you are randomly matched with a new worker. In each period you have the possibility to interact with the worker you are paired with. These interactions will be governed by the same rules in each period. However, since you are randomly assigned a new worker in each period, you will interact with many different trading partners over the duration of the experiment.

Interaction between employers and workers

In what follows we summarize how the interaction between an employer and a worker takes place. In each period the employer and the worker go through the same six stages. At this point we only provide a very brief and general description of each stage. The purpose of this first part of the instructions is to give you an overview of what will happen in the experiment. In the second part of the instructions we provide a much more detailed description of each stage and we also illustrate how you can enter your decisions into the computer.

(1) Assignment of a new worker

At the beginning of every period you are randomly assigned a new worker. The compensation of the worker is regulated in the following way:

- You pay the worker a fixed wage that he receives with certainty. The fixed wage is the same in each period and you cannot change it.
- In addition, you have the possibility to pay the worker a bonus. You decide whether or not to pay the bonus after you have received some information about the return that the worker has produced for you in this period.

(1-2) Communication between employer and worker

At the beginning of each period you have the opportunity to send a message to your worker. In this message you can indicate your strategy regarding the bonus payment.

At the same time, your worker has the opportunity to send you a message in which he can indicate his strategies regarding the effort level and the potential decision to reduce the return.

(1-2) Message exchange between employer and worker

At the beginning of each period you must make the decision to accept a proposed working agreement or not. At the same time, your worker has to make the same decision - accepting the proposed working agreement or not.

It is necessary for both parties – your worker and you – to accept the agreement for it to be in place during the interactions.

Two situations can arise:

- (1) If your worker AND you both decide to accept the agreement, the subsequent interactions will follow with the agreement in place.
- (2) If your worker OR you decide not to accept the agreement, the subsequent interactions will follow without the agreement in place.

(1-2) Message exchange between employer and worker

At the beginning of each period you must make the decision to accept a proposed working agreement or not. At the same time, your worker has to make the same decision - accepting the proposed working agreement or not.

It is necessary for both parties – your worker and you – to accept the agreement. Otherwise, the interactions will cease and you will receive a fixed amount of **40 points** for this period. In the case that both your worker and you accept the agreement, the interactions will proceed as stated in the agreement.

(2) Worker's effort choice

Your worker produces a return for you. The return that the worker produces can be either large or small. The worker can influence the probability with which the return is high by choosing his effort level.

- If the worker chooses to exert high effort, it is very likely that he produces a large return and not very likely that he produces a low return.
- If the worker chooses to provide low effort, in contrast, it is very likely that the return is low and not very likely that the return is high.

For the worker providing high effort is more costly than providing low effort. Once the worker has determined his effort level a computerized random device determines whether the return is large or small.

(3) Information about the quality of the worker's output

Neither you as the employer nor your worker can directly observe the return. However, you and your worker both receive separate and subjective pieces of information about the return.

It is important to understand two facts about these subjective pieces of information:

- The subjective information is not always correct. Your subjective information may indicate a large return although the true return is small (or vice versa).
- The same is also true for your worker's information.
- In addition, it is also possible that your information differs from the information of the worker, i.e., you may get the subjective information that the return is small, while your worker gets the information that the return is large (or vice versa).

(4) Employer's bonus payment

After you have received your subjective information about the return produced by the worker, you need to decide whether you would like to pay a bonus to the worker or not.

- If you decide to pay the bonus, the worker receives his fixed wage plus the bonus as compensation.
- If you decide not to pay the bonus, the worker receives only his fixed wage as compensation.

(5) Worker's decision to reduce the return

The worker observes your decision regarding the bonus payment and can then decide whether or not he would like to reduce the return he has produced for you. If the worker would like to reduce the return this is also costly to him.

Important: The worker does not know with certainty whether the return is large or small. He makes his decision solely based on his knowledge about your bonus payment and his subjective information about the return.

(5-6) Decision to file a complaint

The worker observes your bonus payment decision and can then decide whether to file a complaint or not. Filing a complaint imposes a cost on you and it is also costly for the worker.

Important: The worker does not know with certainty whether the return is large or small. He makes his decision solely based on his knowledge about your bonus payment and his subjective information about the return.

(6) Profits

After the worker's return reduction decision, the period is over. At this point you are informed about the true return that the worker has produced and your profit for this period is displayed on your screen.

The worker also receives information about his profit on the screen. However, the worker is never informed about the true return which he has produced and therefore does not know how much profit you made as employer.

You as the employer do not receive any information about the worker's effort choice and therefore you do not know the profit of the worker.

Subsequently, the next period begins.

Remember: At the beginning of each new period each employer is randomly assigned a new worker.

DETAILED DESCRIPTION OF THE EXPERIMENT

You are an **EMPLOYER** for the whole duration of the experiment.

The experiment is computerized. All decisions that you make during the experiment need be entered in the computer in front of you.

In this second part of the instructions we explain in detail which decision you and the other participants can make, how you can enter these decisions in the computer, and how these decisions affect your own payoff and the payoffs of other participants.

If you have questions while reading the instructions, please raise your hand. An experimenter will come to your workplace and answer your question in private.

(1) Assignment of a new worker

At the beginning of each period you are randomly assigned a new worker who works for you in the current period. The employment relationship adheres to the following rules:

- You pay the worker a fixed wage of 100 points that he gets with certainty. This wage is the same in every period and you cannot change it.
- In addition, you have the possibility to pay the worker a bonus of 50 points after you have received subjective information about the the return that the worker has generated for you. Whether you you pay the bonus or not is completely up to you.

(1-2) Communication between employer and worker

At the beginning of each period you have the opportunity to send a message to your worker. In this message you can indicate your strategy regarding the bonus payment. You can choose any of the following messages:

- (1) I will pay the bonus with certainty.
- (2) I will pay the bonus with high probability.
- (3) I will pay the bonus if I have the impression that you exerted high effort.

- (4) I pay the bonus if my private information indicates a high return.
- (5) I will not pay the bonus.
- (6) I prefer not to send a message.

Important: The message you send is not binding. always full discretion to decide whether to pay the bonus to your worker or not. If you rather not send a message to your worker, you also have the option to do so.

Likewise, your worker also has the opportunity to send you a message indicating his strategy regarding effort level and the potential reduction of return. The workers messaging options regarding the effort level are:

- (1) I will exert high effort.
- (2) I will exert low effort.
- (3) I prefer not to send a message.

The workers messaging options regarding the decision to reduce the return are:

- (1) I will always reduce the return.
- (2) I will reduce the return if I do not get the bonus.
- (3) I will reduce the return if I do not get the bonus although I got a good signal.
- (4) I will never reduce the return.
- (5) I prefer not to send a message.

The message of the worker is not binding. The worker is always free to decide the level of effort and whether to reduce the return or not. If the worker prefers not to send you a message, he also has the option to do so.

(1-2) Message exchange between employer and worker

At the beginning of each period you are given the option to accept a working agreement. This agreement specifies the optimal strategy. You can find an example of this agreement below.

In order to begin the interaction, your worker and you need to take a decision whether to accept the agreement or not. Furthermore, It is necessary for both parties – your worker and you – to accept the agreement for it to be in place during the interactions. Two situations can occur:

- (1) If your worker AND you both decide to accept the agreement, the subsequent interactions will follow with the agreement in place.
- (2) If your worker OR you decide not to accept the agreement, the subsequent interactions will follow without the agreement in place.

Important: The agreement is not binding. You have always full discretion to pay the bonus. Likewise, the worker is not obliged to comply with the terms of the agreement. The worker has full discretion on the level of effort exerted and he can decide freely whether to initiate conflict or not.

(1-2) Message exchange between employer and worker

At the beginning of each period you are given the option to accept a working agreement. This agreement specifies the optimal strategy. You can find an example of this agreement below.

In order to begin the interaction, your worker and you need to take a decision whether to accept the agreement or not. Furthermore, it is necessary for both parties – your worker and you – to accept the agreement for it to be in place during the interactions. Otherwise, the interactions will cease and you will receive a fixed amount of **40 points** for this period.

Important: The agreement is not binding. You have always full discretion to pay the bonus. Likewise, the worker is not obliged to comply with the terms of the agreement. The worker has full discretion on the level of effort exerted and he can decide freely whether to initiate conflict or not.

Working Agreement

The worker and the employer accept:

- 1. Activity**
The worker must exert a high level of effort to increase the probability that the employer receives a high return.
- 2. Duration**
The working relationship begins when both worker and employer accept the agreement until the end of the period.
- 3. Wage**
 - a) The employer must pay the worker a fix salary of 100 points
 - b) The employer must pay a bonus of 50 points if his subjective information indicates that the return is high.
- 4. Complaint report**
 - a) If the subjective information of the workers indicates a high return, and he did not receive a bonus, the worker must file a report that imposes a fine of 100 points to the employer.
 - b) In every other case, i.e., if the bonus is paid or the subjective information of the worker indicates a low return, the worker must

(2) Worker's effort choice

Your worker produces a return for you. There are two possibilities:

- The return can be large: 350 Points
- The return can be small: 150 Points

Your worker cannot directly choose the return. However, he can influence the probability with which the return will be large by choosing his level of work effort on the job. The worker can either provide high effort or low effort. Choosing high effort creates a cost for the worker:

- If the worker decides to provide high effort his effort costs are equal to 10 points.
- If the worker decides to provide low effort his effort costs are equal to 0 points.

The worker's effort choice affects the probability that the return is large as follows:

- If the worker provides high effort, the return is large with a probability of 85% and the return is low with a probability of 15%
- If the worker provides low effort, in contrast, the return is large with a probability of only 15% and the return is small with a probability of 85%.

Once the worker has made his effort choice a computerized random device determines the return.

(3) Information about the quality of the worker's output

Neither you nor your worker can directly observe whether the return is large or small at this point in time. However, you will get a subjective piece of information about the return. Likewise your worker also gets a subjective piece of information. The subjective information is private, i.e., you only get to know your information and you never observe the worker's information. At the same time your worker only observes his information and never learns about your information.

Important: The subjective information does not always reflect the truth:

- It is possible that your subjective information indicates a high value although the true value is low (and vice versa). The same is also true for the information of the worker.
- In addition, you and the worker may receive different information, i.e., it is possible that you get the information that the value is high, while the worker gets the information that the value is low (or vice versa).

Details on subjective information:

Your subjective information as the employer depends on the true return:

- If the true return is large, your subjective information indicates a large return with a probability of 75% and a small return with a probability of 25%.

- If the true return is small, your subjective information indicates a small return with a probability of 75% and a large return with a probability of 25%.

Your subjective information as the employer depends on the true return:

- If your subjective information indicates a large return, the probability that the worker receives the same subjective information is 75%. However, with a probability of 25% the worker's subjective information indicates a small return.
- If your subjective information indicates a small return, the probability that the worker receives the same subjective information is 75%. However, with a probability of 25% the worker's subjective information indicates a large return.

(4) Employer's bonus payment

After you have received your subjective information about the return, you need to decide whether you would like to pay a bonus of 50 points to the worker.

- If you decide to pay the bonus the worker not only receives his fixed wage of 100 points, but also the bonus of 50 points. Thus, in this case the worker's total compensation amounts to 150 points.
- If you decide not to pay the bonus, the worker receives only the fixed wage of 100 points as compensation in this period.

(5) Worker's return reduction decision

The worker is informed about your decision regarding the bonus payment. Then the worker can decide whether or not he would like to reduce the return which he has produced for you as the employer. The worker can reduce your return by at most 80 points. However, reducing the return is also costly to the worker: for each point that he deducts from the return the worker has to pay 0.1 points out of his own profit. For example, if the worker decides to reduce the return by 50 points, he needs to give up 5 points of his own profit.

If the worker decides not to reduce the return, nothing happens and your profit and the worker's profit are unaffected.

The worker's return reduction decision concludes the period. In the third part of the instructions we explain in detail how your choices and the choices of the worker influence your profit as an employer and the profit of the worker.

(5-6) Decision to file a complaint

The worker is informed about your decision regarding the bonus payment. Then the worker can decide whether or not he would like to file a complaint that will impose a cost on you of 100 points. Filing the complaint is also costly for the worker: he needs to pay 10 points.

In order to file a complaint correctly, the worker needs to accept the reasons behind filing the complaint. If the worker decides not to file a complaint, nothing happens and your profit and the worker's profit are unaffected.

The worker's return reduction decision concludes the period. In the third part of the instructions we explain in detail how your choices and the choices of the worker influence your profit as an employer and the profit of the worker.

CALCULATION OF INCOMES AT THE END OF THE PERIOD

Your profit as an employer

Your profit as employer is determined as follows:

$$\begin{aligned} \text{Your profit} = & \text{Return produced by the worker} \\ & - \text{fixed wage to the worker} \\ & - \text{bonus payment to the worker if you decide to pay the bonus} \\ & - \text{return reduction if the worker decides to reduce the return} \end{aligned}$$

Thus, your profit increases if the return is high instead of low. Paying a bonus to the worker reduces your profit. In addition, your profit is also reduced if the worker decides to reduce the return at the end of the period.

Warning: It is possible that your profit becomes negative in certain periods. For example, assume that you have decided to pay the bonus to the worker, the worker has decided to not reduce the return, but it turns out that the return produced by the worker is small. In this case your profit is -50 ($\text{Profit} = \text{Return} - \text{Wage} - \text{Bonus} = 150 - 100 - 50 = -50$). You have to pay for these negative profits with accumulated profits from previous periods, and, if necessary, with your show-up fee.

The worker's profit

Your profit as worker is determined as follows:

$$\begin{aligned} \text{Worker's profit} = & \text{Fixed wage from employer} \\ & + \text{bonus from employer if the employer decides to pay the bonus} \\ & - \text{cost of effort, if the worker decides to provide high effort} \end{aligned}$$

Thus the worker's profit is higher if you decide to pay him the bonus. Choosing a high effort reduces the profit of the worker.

After the payoff screen disappears a new period begins in which you are randomly rematched with a new worker.

In the fourth part of these instructions we will ask you to answer a series of control questions. Please fill in the necessary calculations in the empty spaces provided on the exercise sheets. Once you have found the final result for a question, you can enter the result on your computer screen and the computer will tell you whether your answer is correct or not.

If you have questions, please raise your hand and wait until an experimenter comes to your workplace to answer your question in private.

The following list summarizes all the important parameters of the experiment. You need these numbers to answer the control questions.

Return

- Large return = 350 Points
- Small return = 150 Points

Cost of worker's effort

- Cost of high effort = 10 Points
- Cost of low effort = 0 Points

Worker's compensation

- Fixed wage = 100 Points
- Bonus = 50 Points

Probabilities that a small or large return is realized:

Worker's effort	Large return (300 Points)	Small return (100 Points)
High	85%	15%
Low	15%	85%

Probabilities that your subjective information indicates a small or large return:

True return	Subjective information: large	Subjective information: small
Large	75%	25%
Small	25%	75%

Probabilities that the worker's subjective information indicates a small or large return:

Your subjective Information	Worker's subj. info: large	Worker's subj. info: small
Large	75%	25%
Small	25%	75%

Cost of return reduction: The worker can reduce your return by 100 points which as a cost of 10 points.

CONTROL QUESTIONS

To check if you comprehended the consequences of your decisions during this experiment, we ask you to answer the following question. You can use the piece of paper to solve the questions. To check whether you've reached the right solution, please, enter your responses in the computer.

Exercise 1

Assume that the true return is large:

What is the probability that your subjective information indicates a large return: ___

What is the probability that your subjective information indicates a small return: ___

Assume that the true return is small:

What is the probability that your subjective information indicates a large return: ___

What is the probability that your subjective information indicates a small return: ___

Assume that your subjective information indicates a large return:

What is the probability that your worker has the same subjective information: ___

What is the probability that your worker's subjective information is different: ___

Assume that your subjective information indicates a small return:

What is the probability that your worker has the same subjective information: ___

What is the probability that your worker's subjective information is different: ___

Exercise 2

For this exercise assume that your worker chooses to provide **high effort**.

- (1) What is the probability that a *large* (350 points) return is realized?
- (2) What is the probability that a *small* return (150 points) is realized?
- (3) Assume that you do NOT pay the bonus and the worker does NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

- (4) Assume that you pay the bonus and the worker does NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

- (5) Assume that you do NOT pay the bonus and the worker reduces the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

- (6) Assume that you pay the bonus and the worker reduces the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

Exercise 3

For this exercise assume that your worker chooses to provide **low effort**.

- What is the probability that a *large* (350 points) return is realized?
- What is the probability that a *small* return (150 points) is realized?
- Assume that you do NOT pay the bonus and the worker does NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

- (4) Assume that you pay the bonus and the worker does NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

- (5) Assume that you do NOT pay the bonus and the worker reduces the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

(6) Assume that you pay the bonus and the worker reduces the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your worker	___	___

Exercise 4

For this exercise assume that both your worker and you have accepted the working agreement.

(1) According to the agreement, what level of effort should the worker exert?

High or Low

(2) If your subjective information indicates a low return, should you pay the bonus according to the agreement?

Yes or No

(3) If your subjective information indicates a high return, should you pay the bonus according to the agreement?

Yes or No

(4) If you haven't paid the bonus and the subjective information of the worker indicates a high return, should the worker reduce your return according to the agreement?

Yes or No

(5) If you haven't paid the bonus and the subjective information of the worker indicates a low return, should the worker reduce your return according to the agreement?

Yes or No

Instructions for Workers

Introduction

You are about to participate in an experiment of the University of Lausanne. During this experiment you have the opportunity to earn a sum of money that will be paid to you at the end of the experiment. The amount of money you earn may be more significant if

- you read the instructions carefully.
- you think carefully about the decisions you make.

If you have any questions while reading the instructions or while the experiment is in progress, feel free to call us by raising your hand. By contrast, any communication between participants—except through the channels offered as part of the experiment—is prohibited. In the event of non-compliance with these instructions, we will be obliged to exclude you from the experience without any payment.

In today's experiment, you will interact with other participants via your computer. The decisions you make will have an impact on your profit. Your decisions will also influence the profit of other participants, just as the decisions of other participants may influence your profit.

Your profit is calculated in points. At the end of the experiment your points will be converted into Swiss Francs according to the following exchange rate:

$$\mathbf{70 \text{ points} = 1 \text{ Swiss Franc}}$$

Regardless of your decisions in the experiment, you will also receive a fixed amount of CHF 10 for your participation.

The experiment consists of several identical rounds. At the end of the session, your remuneration will be calculated as the sum of your income obtained in all these rounds.

SUMMARY OF THE EXPERIMENT

There are two types of participants in today's experiment: employers and workers. Each participant is randomly assigned to one of the two roles.

You will be an **WORKER** for the whole duration of the experiment.

The experiment consists of a total of 15 periods. At the beginning of each period you are randomly matched with a new employer. In each period you have the possibility to interact with the employer you are paired with. These interactions will be governed by the same rules in each period. However, since you are randomly assigned to a new employer in each period, you will interact with many different trading partners over the duration of the experiment.

Interaction between employers and workers

In what follows we summarize how the interaction between an employer and a worker takes place. In each period the employer and the worker go through the same six stages. At this point we only provide a very brief and general description of each stage. The purpose of this first part of the instructions is to give you an overview of what will happen in the experiment. In the second part of the instructions we provide a much more detailed description of each stage and we also illustrate how you can enter your decisions in the computer.

(1) Assignment to a new employer

At the beginning of every period you are randomly assigned to a new employer. Your compensation as worker is regulated in the following way:

- You receive a fixed wage that the employer has to pay with certainty. The fixed wage is the same in each period and the employer cannot change it.
- In addition, the employer has the possibility to pay you a bonus. The employer decides whether or not to pay the bonus after he has received some information about the return that you (as the worker) have produced for him in this period.

(1-2) Communication between employer and worker

At the beginning of each period you have the opportunity to send a message to your employer. In this message you can indicate your strategy regarding the effort level and the potential decision to reduce the return. At the same time, your employer has the opportunity to send you a message in which he can indicate his strategies regarding the bonus payment.

(1-2) Message exchange between employer and worker

At the beginning of each period you must make the decision to accept a proposed working agreement or not. At the same time, your employer has to make the same decision - accepting the proposed working agreement or not.

It is necessary for both parties – your employer and you – to accept the agreement for it to be in place during the interactions.

Two situations can arise:

- (1) If your employer AND you both decide to accept the agreement, the subsequent interactions will follow with the agreement in place.
- (2) If your employer OR you decide not to accept the agreement, the subsequent interactions will follow without the agreement in place.

(1-2) Message exchange between employer and worker

At the beginning of each period you must make the decision to accept a proposed working agreement or not. At the same time, your worker has to make the same decision - accepting the proposed working agreement or not.

It is necessary for both parties – your employer and you – to accept the agreement. Otherwise, the interactions will cease and you will receive a fixed amount of **40 points** for this period. In the case that both your employer and you accept the agreement, the interactions will proceed as stated in the agreement.

(2) Worker's effort choice

As a worker you produce a return for your employer. The return that you produce can be either large or small. As a worker you can influence the probability with which the return is high by choosing your effort level.

- If you choose to exert high effort, it is very likely that you produce a large return and not very likely that you produce a low return.
- If you choose to provide low effort, in contrast, it is very likely that the return is low and not very likely that the return is high.

For you providing high effort is more costly than providing low effort. Once you have determined your effort level a computerized random device determines whether the return is large or small.

(3) Information about the quality of the worker's output

Neither you as the worker nor your employer can directly observe the return. However, you and your employer both receive separate and subjective pieces of information about the return.

It is important to understand two facts about these subjective pieces of information:

- The subjective information is not always correct. Your subjective information may indicate a large return although the true return is small (or vice versa).
- The same is also true for your employer's information.
- In addition, it is also possible that your information differs from the information of the employer, i.e., you may get the subjective information that the return is small, while your employer gets the information that the return is large (or vice versa).

(4) Employer's bonus payment

After your employer has received his subjective information about the return that you have produced, he needs to decide whether he would like to pay a bonus to you or not.

- If the employer decides to pay the bonus, you receive the fixed wage plus the bonus as compensation.
- If the employer decides not to pay the bonus, you receives only the fixed wage as compensation.

(5) Worker's return reduction decision

As a worker you observe the employer's decision regarding the bonus payment and you can then decide whether or not you would like to reduce the return that you have produced for the employer. If you would like to reduce the return this is slightly costly to you.

Important: You do not know with certainty whether the return is large or small. You make your decision solely based on your knowledge about the bonus payment of the employer and your subjective information about the return.

(5-6) Decision to file a complaint

As a worker you observe the employer's decision regarding the bonus payment and you can then decide whether you would like or not to file a complaint. Filing a complaint imposes a cost on your employer of 100 points and it also costs you 10 points. Instead, if you decide not to file a complaint, neither your employer or you would need to pay the associated cost.

(6) Profits

After your return reduction decision, the period is over. At this point you receive information about your profit on the screen. However, you are never informed about the true return which you have produced and therefore you do also not know how much profit your employer made. The employer is informed about the true return that you have produced as a worker and his profit for this period is displayed on his screen. The employer does not receive any information about your true effort choice and therefore the employer does not know how much profit you made as a worker.

DETAILED DESCRIPTION OF THE EXPERIMENT

You are a **WORKER** for the whole duration of the experiment.

The experiment is computerized. All decisions that you make during the experiment need be entered in the computer in front of you.

In this second part of the instructions we explain in detail which decision you and the other participants can make, how you can enter these decisions in the computer, and how these decisions affect your own payoff and the payoffs of other participants.

If you have questions while reading the instructions, please raise your hand. An experimenter will come to your workplace and answer your question in private.

(1) Assignment to a new employer

At the beginning of each period you are randomly assigned to a new employer who works for you in the current period. The employment relationship adheres to the following rules:

- The employer pays you a fixed wage of 100 points with certainty. This wage is the same in every period and the employer cannot change it.
- In addition, the employer has the possibility to pay you a bonus of 50 points after he has received subjective information about the return that you have generated for him. Whether the employer pays the bonus or not is completely up to him.

(1-2) Communication between employer and worker

At the beginning of each period you have the opportunity to send you a message to your employer indicating your strategy regarding effort level and the potential reduction of return. At the beginning of each period you have the opportunity to send a message to your worker. In this message you can indicate your strategy regarding the bonus payment. You can choose any of the following messages:

- (1) I will pay the bonus with certainty.
- (2) I will pay the bonus with high probability.
- (3) I will pay the bonus if I have the impression that you exerted high effort.
- (4) I pay the bonus if my private information indicates a high return.
- (5) I will not pay the bonus.
- (6) I prefer not to send a message.

Important: The message you send is not binding. You are always free to decide whether to pay the bonus to your worker or not. If you rather not send a message to your worker,

you also have the option to do so. You can choose any of the following messages regarding effort:

- (1) I will exert high effort.
- (2) I will exert low effort.
- (3) I prefer not to send a message.

You can choose any of the following messages regarding the decision to reduce the employer's return:

- (1) I will always reduce the return.
- (2) I will reduce the return if I do not get the bonus.
- (3) I will reduce the return if I do not get the bonus although I got a good signal.
- (4) I will never reduce the return.
- (5) I prefer not to send a message.

Important: The messages you choose are not binding. You have full discretion to decide the level of effort and whether to reduce the return or not. If you prefer to not send a message to your employer, you also have the option to do so .

Simultaneously, your employer also has the opportunity to send you a message indicating his strategy regarding bonus payment:

- (1) I will pay the bonus with certainty.
- (2) I will pay the bonus with high probability.
- (3) I will pay the bonus if I have the impression that you exerted high effort.
- (4) I pay the bonus if my private information indicates a high return.
- (5) I will not pay the bonus.
- (6) I prefer not to send a message.

The message of the employer is not binding. The employer is always free to decide the final bonus payment decision. If the employer prefers not to send you a message, he also has the option to do so.

(1-2) Message exchange between employer and worker

At the beginning of each period you are given the option to accept a working agreement. This agreement specifies the optimal strategy. You can find an example of this agreement one Figure 8.

In order to begin the interaction, your employer and you need to take the decision of whether to accept the agreement or not. Furthermore, it is necessary for both parties – your employer and you – to accept the agreement for it to be in place during the interactions. Two situations can occur:

- (1) If your employer AND you both decide to accept the agreement, the subsequent interactions will follow with the agreement in place.
- (2) If your employer OR you decide not to accept the agreement, the subsequent interactions will follow without the agreement in place.

Important: The agreement is not binding. You have always full discretion to choose the level of effort and the reduce the return of your employer. Likewise, the employer is not obliged to comply with the terms of the agreement. The employer has full discretion on decision to pay the bonus.

FIGURE 8. Agreement

Working Agreement
<p>The worker and the employer accept:</p> <p>1. Activity</p> <p>The worker must exert a high level of effort to increase the probability that the employer receives a high return.</p> <p>2. Duration</p> <p>The working relationship begins when both worker and employer accept the agreement until the end of the period.</p> <p>3. Wage</p> <p>a) The employer must pay the worker a fix salary of 100 points</p> <p>b) The employer must pay a bonus of 50 points if his subjective information indicates that the return is high.</p> <p>4. Complaint report</p> <p>a) If the subjective information of the workers indicates a high return, and he did not receive a bonus, the worker must file a report that imposes a fine of 100 points to the employer.</p> <p>b) In every other case, i.e., if the bonus is paid or the subjective information of the worker indicates a low return, the worker must</p>

(2) Worker's effort choice +

As a worker you produce a return for your employer. There are two possibilities:

- The return can be large: 350 Points
- The return can be small: 150 Points

You cannot directly choose the return. However, you can influence the probability with which the return will be large by choosing your level of work effort on the job. You can either provide high effort or low effort. Choosing high effort creates a cost for you:

- If you decide to provide high effort your effort costs are equal to 10 points.

- If you decide to provide low effort your effort costs are equal to 0 points.

Your effort choice affects the probability that the return is large as follows:

- If you provide high effort, the return is large with a probability of 85% and the return is low with a probability of 15%.
- If you provide low effort, in contrast, the return is large with a probability of only 15% and the return is small with a probability of 85%.

(3) Information about the quality of the worker's output

Neither you nor your employer can directly observe whether the return is large or small at this point in time. However, you will get a subjective piece of information about the return.

Likewise your employer also gets a subjective piece of information. The subjective information is private, i.e., you only get to know your information and you never observe the employer's information. At the same time your employer only observes his information and never learns about your information.

Important:

The subjective information does not always reflect the truth:

- It is possible that your subjective information indicates a high value although the true value is low (and vice versa). The same is also true for the information of the employer.
- In addition, you and the employer may receive different information, i.e., it is possible that you get the information that the value is high, while the employer gets the information that the value is low (or vice versa).

Details on subjective information:

The employer's subjective information depends directly on the true return:

- If the true return is large, your subjective information indicates a large return with a probability of 75% and a small return with a probability of 25%.
- If the true return is small, your subjective information indicates a small return with a probability of 75% and a large return with a probability of 25%.

Your own subjective information as the worker depends on the subjective information of the employer:

- If the employer's subjective information indicates a large return, the probability that you receive the same subjective information is 75%. However, with a probability of 25% your subjective information indicates a small return.

- If the employer's subjective information indicates a small return, the probability that you receive the same subjective information is 75%. However, with a probability of 25% your subjective information indicates a large return.

(4) Employer's bonus payment

After the employer has received his subjective information about the return, he needs to decide whether he would like to pay you a bonus of 50 points.

- If the employer decides to pay the bonus you not only receive the fixed wage of 100 points, but also the bonus of 50 points. Thus, in this case your total compensation amounts to 125 points.
- If the employer decides not to pay the bonus you receive only the fixed wage of 100 points as compensation in this period.

After the employer has made his bonus payment decision, you are informed about his decision.

(5) Worker's return reduction decision

After you have been informed about the employer's bonus decision, you can decide whether or not you would like to reduce the return which you have produced for the employer. You can reduce the return by at most 100 points. However, reducing the return is also costly for you: for each point that you deduct from the return you have to pay 0.1 points out of your own profit. For example, if you decide to reduce the return by 50 points, you need to pay 5 points out of your own profit. Instead, if you decide not to reduce the return, nothing happens and the profits of the employer and your own profit are unaffected.

Your return reduction decision concludes the period. In the third part of the instructions we explain in detail how your choices and the choices of the employer influence your profit as a worker and the profit of the employer.

(5-6) Decision to file a complaint

After you have been informed about the employer's bonus decision, you can decide whether or not you would like to file a complaint. Filing a complaint imposes a cost on your employer of 100 points and it also costs you 10 points.

Instead, if you decide not to file a complaint, nothing happens and the profits of the employer and your own profit are unaffected.

Your return reduction decision concludes the period. In the third part of the instructions we explain in detail how your choices and the choices of the employer influence your profit as a worker and the profit of the employer.

Your profit as an employer

Your profit as employer is determined as follows:

$$\begin{aligned} \text{Your profit} = & \text{Fixed wage from employer} \\ & + \text{bonus from employer if the employer decides to pay the bonus} \\ & - \text{cost of effort, if you decide to provide high effort} \end{aligned}$$

Thus your profit is higher if your employer decides to pay you the bonus. Choosing a high effort reduces your profit.

The employer's profit

Your profit as worker is determined as follows:

$$\begin{aligned} \text{Employer's profit} = & \text{Return produced by the worker} \\ & - \text{fixed wage to the worker} \\ & - \text{bonus payment to the worker if you decide to pay the bonus} \\ & - \text{return reduction if the worker decides to reduce the return} \end{aligned}$$

Thus, the employer's profit increases if the return is high instead of low. Paying a bonus reduces the employer's profit. In addition, the employer's profit is also reduced if you decide to reduce the return at the end of the period.

Warning: It is possible that the employer's profit becomes negative in certain periods. For example, assume that the employer has decided to pay the bonus, you have decided not to reduce the return, but it turns out that the return is small. In this case the employer's profit is -50 (Profit = Return - Wage - Bonus = $100 - 100 - 50 = -50$). The employer has to pay for these negative profits with accumulated profits from previous periods, and, if necessary, with his show-up fee.

You are never informed about the true return which you have produced and therefore you do also not know how much profit your employer made.

The employer is informed about the true return that you have produced as a worker and his profit for this period is displayed on his screen, but the employer does not receive any information about your true effort choice and therefore the employer does not know how much profit you made as a worker.

After the payoff screen disappears a new period begins in which you are randomly rematched with a new worker.

In the fourth part of these instructions we will ask you to answer a series of control questions. Please fill in the necessary calculations in the empty spaces provided on the exercise sheets. Once you have found the final result for a question, you can enter the result on your computer screen and the computer will tell you whether your answer is correct or not.

If you have questions, please raise your hand and wait until an experimenter comes to your workplace to answer your question in private.

The following list summarizes all the important parameters of the experiment. You need these numbers to answer the control questions.

Return

- Large return = 350 Points
- Small return = 150 Points

Your effort costs

- Cost of high effort = 10 Points
- Cost of low effort = 0 Points

Your compensation

- Fixed wage = 100 Points
- Bonus = 50 Points

Probabilities that a small or large return is realized:

Worker's effort	Large return (300 Points)	Small return (100 Points)
High	85%	15%
Low	15%	85%

Probabilities that the employer's subjective information indicates a small or large return:

True return	Subjective information: large	Subjective information: small
Large	75%	25%
Small	25%	75%

Probabilities that your subjective information indicates a small or large return:

Your subjective Information	Worker's subj. info: large	Worker's subj. info: small
Large	75%	25%
Small	25%	75%

Cost of return reduction: The worker can reduce your return by 100 points. For each point that he deducts from the return he has to pay 0.1 Points out of his own profit.

CONTROL QUESTIONS

To check your if you comprehended the consequences of your decisions during this experiment, we ask you to answer the following question. You can use the piece of paper to solve the questions. To check whether you've reached the right solution, please, enter your responses in the computer.

Exercise 1

Assume that the true return is large:

- (1) What is the probability that the employer's subjective information indicates a large return? ___
- (2) What is the probability that the employer's subjective information indicates a small return? ___

Assume that the true return is small:

- (1) What is the probability that the employer's subjective information indicates a large return? ___
- (2) What is the probability that the employer's subjective information indicates a small return? ___

Suppose that the employer's subjective information indicates a large return:

- (1) What is the probability that you receive the same subjective information? ___
- (2) What is the probability that your subjective information is different? ___

Suppose that the employer's subjective information indicates a small return:

- (1) What is the probability that you receive the same subjective information? ___
- (2) What is the probability that your subjective information is different? ___

Exercise 2

For this exercise assume that your worker chooses to provide **high effort**.

- (1) What is the probability that a *large* (350 points) return is realized?
- (2) What is the probability that a *small* return (150 points) is realized?
- (3) Assume that the employer does NOT pay the bonus and you do NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

(4) Assume that the employer pays the bonus and you do NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

(5) Assume that the employer does NOT pay the bonus and you reduce the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

(6) Assume that the employer pays the bonus and you reduce the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

Exercise 3

For this exercise assume that your worker chooses to provide **low effort**.

- (1) What is the probability that a *large* (350 points) return is realized?
- (2) What is the probability that a *small* return (150 points) is realized?
- (3) Assume that the employer does NOT pay the bonus and you do NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

(4) Assume that the employer pays the bonus and you do NOT reduce the return

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

(5) Assume that the employer does NOT pay the bonus and you reduce the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

(6) Assume that the employer pays the bonus and you reduce the return by 100 points

	Large return (350 points)	Small return (150 points)
Your profit	___	___
Profit of your employer	___	___

Exercise 4-2

For this exercise assume that both your worker and you have accepted the working agreement.

(1) According to the agreement, what level of effort should the worker exert?

High or Low

(2) If your subjective information indicates a low return, should you pay the bonus according to the agreement?

Yes or No

(3) If your subjective information indicates a high return, should you pay the bonus according to the agreement?

Yes or No

(4) If you haven't paid the bonus and the subjective information of the worker indicates a high return, should the worker reduce your return according to the agreement?

Yes or No

(5) If you haven't paid the bonus and the subjective information of the worker indicates a low return, should the worker reduce your return according to the agreement?

Yes or No

Exercise 4-2

For this exercise assume that both your worker and you have accepted the working agreement.

(1) According to the agreement, what level of effort should the worker exert?

High or Low

(2) If your subjective information indicates a low return, should you pay the bonus according to the agreement?

Yes or No

- (3) If your subjective information indicates a high return, should you pay the bonus according to the agreement?

Yes or No

- (4) If you haven't paid the bonus and the subjective information of the worker indicates a high return, should the worker reduce your return according to the agreement?

Yes or No

- (5) If you haven't paid the bonus and the subjective information of the worker indicates a low return, should the worker reduce your return according to the agreement?

Yes or No

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