

Online supplementary material for

HIDDEN COSTS OF CONTROL: FOUR REPETITIONS AND AN EXTENSION

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Appendices A and B contain translated versions of the instructions for Experiment 4's medium control treatment (originally in German). The instructions for the first three experiments are identical except for the blue paragraphs which are omitted. Appendices C and D contain translated versions of the questionnaires (originally in German). Note that for each scenario, we indicate whether the condition is "control" or "trust". Obviously, this was not indicated in the original questionnaires. Appendix E summarizes the questionnaire data. Finally, the distributions of transfer pairs from agents to principals are displayed in Appendix F.

Appendix A. Instructions for the agents (participants A)

You are now participating in an economic experiment which has been funded by the Max Planck Institute of Economics.

Please read the following instructions carefully. The instructions will provide you with all the information you require for participation in the experiment. Please ask for assistance if there is something that you do not understand. Your question will be answered at your workplace. There is a strict prohibition of communication during the experiment.

The decisions in this experiment are purely hypothetical. All participants are paid a fixed amount of 10 euros for making their decisions in this experiment. Nevertheless, please think carefully about what you would decide in the following situation:

You will receive an initial endowment of 2.50 euros at the beginning of the experiment. You can earn additional money over the course of the experiment by collecting points. All of the points which you accrue over the course of the experiment will be converted to euros at the end of the experiment. Please note that:

1 point = 0.10 euros

At the end of the experiment, you will receive the income which you earned over the course of the experiment plus the 2.50 euros of initial endowment in cash.

The experiment

In this experiment, each participant A is associated with a participant B in a group of two. No participant knows with whom he is associated, meaning that all decisions are made anonymously.

You are a participant A.

Participant A receives an amount of 120 points at the beginning of this experiment. Participant B receives no points.

Participant A's decision:

Participant A can decide how many points he wants to transfer to participant B. The experimenter doubles each point which A transfers to B. Thus, each point which A transfers to B reduces A's income by one point and increases B's income by two points.

The formula for calculating income is as follows:

Participant A's income: $120 - \text{transfer}$

Participant B's income: $0 + 2 \times \text{transfer}$
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The following examples will clarify the income formulas:

Example 1: A transfers 0 points to B. The incomes are then 120 for A and 0 for B.

Example 2: A transfers 20 points to B. The incomes are then 100 for A and 40 for B.

Example 3: A transfers 80 points to B. The incomes are then 40 for A and 160 for B.

Participant B's decision:

Before A decides how many points he wishes to transfer to B, B can determine a minimum transfer. In particular, B can constrain his associated participant A to transfer him at least 10 points. However, he can also decide not to limit participant A and thus leave his transfer decision completely free.

Therefore, there are two cases:

Case 1: Participant B constrains participant A to transfer at least 10 points to him. In this case, participant A can transfer any (integer) amount **between 10 and 120** to B.

Case 2: Participant B allows participant A to decide on his transfer freely and does not constrain him to transfer at least 10 points to him. In this case, participant A can transfer any (integer) amount **between 0 and 120** to B.

Therefore, the experiment consists of two stages:

Stage 1:

In stage 1, B decides if he will constrain A to transfer at least 10 points to him, or if he will allow A to decide freely.

Stage 2:

In stage 2, A decides which amount he will transfer to B. This amount lies

- between 10 and 120, if B constrains A to transfer at least 10 points;
- or
- between 0 and 120, if B does not constrain A to transfer at least 10 points.

The experiment is completed as soon as A has decided how many points he will transfer to B.

Please note that you, as participant A, must decide which amount you will transfer to B **before you know whether or not B will constrain you to transfer at least 10 points**. This means that you must make two decisions. You can make your entries with the help of this monitor:

Remaining Time (sec): 134

You are Participant A

You have 120 points. participant B has 0 points
You can transfer points to participant B.
The experimenter will double each point you transfer.

Case 1: Assuming that participant B constrains you to transfer at least 10 points.
How many points will you transfer in this case ?

Case 2: Assuming that participant B allows you to decide freely.
How many points will you transfer in this case ?

Therefore, you indicate how many points you transfer to B when B constrains you to transfer at least 10 points (case 1) and how many points you will transfer when you are free to decide (case 2).

Which of the decisions is relevant for you depends on what B decides. If he constrains you to transfer at least 10 points, the decision you give under case 1 applies. If he leaves you free in your decision, the point amount which you indicate under case 2 applies.

A final income monitor will inform you of the decisions and the resulting incomes.

Your point income will be converted to euros and paid out in cash to you together with your initial endowment.

At the end of the experiment you will be paid a fixed amount of 10 euros in cash. We would be very grateful if you still think about your decisions carefully.

Do you have any questions?

Please solve the following control questions. They have no consequence on your income and only serve to check if all participants in the experiment have understood the rules.

Question 1: Assume that participant B allows A to decide freely. A transfers 22 points. What are the incomes?

Income for A:

Income for B:

Question 2: Assume that participant B constrains A to transfer at least 10 points. A transfers 12 points. What are the incomes?

Income for A:

Income for B:

Question 3: Assume that participant B allows A to decide freely. A transfers 6 points. What are the incomes?

Income for A:

Income for B:

Please raise your hand when you have solved the control questions.

Appendix B. Instructions for the principals (participants B)

You are now participating in an economic experiment which has been funded by the Max Planck Institute of Economics.

Please read the following instructions carefully. The instructions will provide you with all the information you require for participation in the experiment. Please ask for assistance if there is something that you do not understand. Your question will be answered at your workplace. There is a strict prohibition of communication during the experiment.

The decisions in this experiment are purely hypothetical. All participants are paid a fixed amount of 10 euros for making their decisions in this experiment. Nevertheless, please think carefully about what you would decide in the following situation:

You will receive an initial endowment of 2.50 euros at the beginning of the experiment. You can earn additional money over the course of the experiment by collecting points. All of the points which you accrue over the course of the experiment will be converted to euros at the end of the experiment. Please note that:

1 point = 0.10 euros

At the end of the experiment, you will receive the income which you earned over the course of the experiment plus the 2.50 euros of initial endowment in cash.

The experiment

In this experiment, each participant A is associated with a participant B in a group of two. No participant knows with whom he is associated, meaning that all decisions are made anonymously.

You are a participant B.

Participant A receives an amount of 120 points at the beginning of this experiment. Participant B receives no points.

Participant A's decision:

Participant A can decide how many points he wants to transfer to participant B. The experimenter doubles each point which A transfers to B. Thus, each point which A transfers to B reduces A's income by one point and increases B's income by two points.

The formula for calculating income is as follows:

Participant A's income: $120 - \text{transfer}$

Participant B's income: $0 + 2 \times \text{transfer}$
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The following examples will clarify the income formulas:

Example 1: A transfers 0 points to B. The incomes are then 120 for A and 0 for B.

Example 2: A transfers 20 points to B. The incomes are then 100 for A and 40 for B.

Example 3: A transfers 80 points to B. The incomes are then 40 for A and 160 for B.

Participant B's decision:

Before A decides how many points he wishes to transfer to B, B can determine a minimum transfer. In particular, B can constrain his associated participant A to transfer him at least 10 points. However, he can also decide not to limit participant A and thus leave his transfer decision completely free.

Therefore, there are two cases:

Case 1: Participant B constrains participant A to transfer at least 10 points to him. In this case, participant A can transfer any (integer) amount **between 10 and 120** to B.

Case 2: Participant B allows participant A to decide on his transfer freely and does not constrain him to transfer at least 10 points to him. In this case, participant A can transfer any (integer) amount **between 0 and 120** to B.

Therefore, the experiment consists of two stages:

Stage 1:

In stage 1, B decides if he will constrain A to transfer at least 10 points to him, or if he will allow A to decide freely.

Stage 2:

In stage 2, A decides which amount he will transfer to B. This amount lies

- between 10 and 120, if B constrains A to transfer at least 10 points;
- or
- between 0 and 120, if B does not constrain A to transfer at least 10 points.

The experiment is completed as soon as A has decided how many points he will transfer to B.

The decisions of A and B will be entered on the monitors at the computers. A final income monitor will inform you of the decisions and the resulting incomes.

Your point income will be converted to euros and paid out in cash to you together with your initial endowment.

At the end of the experiment you will be paid a fixed amount of 10 euros in cash. We would be very grateful if you still think about your decisions carefully.

Do you have any questions?

Please solve the following control questions. They have no consequence on your income and only serve to check if all participants in the experiment have understood the rules.

Question 1: Assume that participant B allows A to decide freely. A transfers 22 points. What are the incomes?

Income for A:

Income for B:

Question 2: Assume that participant B constrains A to transfer at least 10 points. A transfers 12 points. What are the incomes?

Income for A:

Income for B:

Question 3: Assume that participant B allows A to decide freely. A transfers 6 points. What are the incomes?

Income for A:

Income for B:

Please raise your hand when you have solved the control questions.

Appendix C. Questionnaire 1

In the following, we present several scenarios. For each scenario, please imagine how you would react if you found yourself in the described situation and answer conscientiously the corresponding question.

Scenario 1 (trust condition): You began a new vacation job in a supermarket. Your task is to check the balances in the cash registers in the evening, meaning that you examine whether the amounts of money in the cash registers agree with the entries. In principle, you could easily swindle the supermarket by simply removing money from the cash registers. You examined the cash registers conscientiously and without cheating, and reported the results honestly. The manager believes that you reports are honest and does not double check the balances in the cash registers.

How high is your work motivation the next day?

Very high High Medium Low Very low

Scenario 2 (control condition): You have a new job. Your boss explains your tasks to you as well as the amount of work expected of you. Before starting your work, you have to sign a binding agreement. This defines your working times exactly.

How high is your work motivation at your new workplace?

Very high High Medium Low Very low

Scenario 3 (control condition): During a job interview, you presented your knowledge, experience, and qualifications truthfully. You provide your previous employer as a reference who could confirm your information. The new employer does not hire you until he has gathered information about you from your previous employer and confirmed the accuracy of your information.

How high is your work motivation?

Very high High Medium Low Very low

Scenario 4 (trust condition): During your studies, you start working in a small family-owned company. The head of the company explains to you that for cost reasons it is not allowed to use the photocopier or the printer for private purposes. You clearly plan to adhere to this directive. The room where the photocopier and the printer are located stands open.

How high is your work motivation?

Very high High Medium Low Very low

Scenario 5 (control condition): You do various administrative tasks for a small company. Recently, an Internet access has been provided on all PCs, but this access may be used only for business purposes. In order to limit potential abuses, the management installed special software, which lists all Internet sites the employees have visited.

How high is your work motivation?

Very high High Medium Low Very low

Appendix D. Questionnaire 2

In the following, we present several scenarios. For each scenario, please imagine how you would react if you found yourself in the described situation and answer conscientiously the corresponding question.

Scenario 1 (control condition): You began a new vacation job in a supermarket. Your task is to check the balances in the cash registers in the evening, meaning that you examine whether the amounts of money in the cash registers agree with the entries. In principle, you could easily swindle the supermarket by simply removing money from the cash registers. You examined the cash registers conscientiously and without cheating, and reported the results honestly. You realize on the way home that you forgot your umbrella. When you enter the supermarket, you see that the manager is again examining the amounts in the cash registers.

How high is your work motivation the next day?

Very high High Medium Low Very low

Scenario 2 (trust condition): You have a new job. Your boss explains your tasks to you as well as the amount of work expected of you. Your boss asks you to follow the work times exactly.

How high is your work motivation at your new workplace?

Very high High Medium Low Very low

Scenario 3 (trust condition): During a job interview, you presented your knowledge, experience, and qualifications truthfully. You provide your previous employer as a reference who could confirm your information. The new employer believes your information and hires you.

How high is your work motivation?

Very high High Medium Low Very low

Scenario 4 (control condition): During your studies, you start working in a small family-owned company. The head of the company explains to you that for cost reasons it is not allowed to use the photocopier or the printer for private purposes. You clearly plan to adhere to this directive. The room where the photocopier and the printer are located is locked, meaning that in general you first have to get the key from your boss.

How high is your work motivation?

Very high High Medium Low Very low

Scenario 5 (trust condition): You do various administrative tasks for a small company. Recently, an Internet access has been provided on all PCs, but this access may be used only for business purposes. During a meeting, the management asks all employees to respect this rule.

How high is your work motivation?

Very high High Medium Low Very low

Appendix E. Questionnaire data (relative frequencies in percentages)

Table E1: Questionnaire data for Experiment 1

Work Motivation	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	Control	Trust	Control	Trust	Control	Trust	Control	Trust	Control	Trust
Very low	1.79	0.00	0.00	1.79	1.61	1.79	1.79	0.00	6.45	1.79
Low	10.71	1.61	8.06	0.00	8.06	0.00	8.93	1.61	16.13	1.79
Medium	41.07	16.13	45.16	23.21	40.32	1.79	35.71	25.81	35.48	37.50
High	26.79	53.23	35.48	44.64	38.71	35.71	35.71	54.84	30.65	41.07
Very high	19.64	29.03	11.29	30.36	11.29	60.71	17.86	17.74	11.29	17.86
N observations	56	62	62	56	62	56	56	62	62	56

Table E2: Questionnaire data for Experiment 2

Work Motivation	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	Control	Trust	Control	Trust	Control	Trust	Control	Trust	Control	Trust
Very low	12.07	0.00	0.00	0.00	1.72	0.00	3.45	0.00	6.90	1.72
Low	22.41	5.17	6.90	0.00	12.07	1.72	24.14	3.45	20.69	13.79
Medium	50.00	13.79	43.10	15.52	31.03	3.45	46.55	29.31	31.03	31.03
High	12.07	29.31	31.03	56.90	29.31	44.83	20.69	48.28	27.59	48.28
Very high	3.45	51.72	18.97	27.59	25.86	50.00	5.17	18.97	13.79	5.17
N observations	58	58	58	58	58	58	58	58	58	58

Table E3: Questionnaire data for Experiment 3

Work Motivation	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	Control	Trust	Control	Trust	Control	Trust	Control	Trust	Control	Trust
Very low	2.50	0.00	2.00	1.25	2.00	1.25	1.25	0.00	6.00	1.25
Low	21.25	2.00	6.00	5.00	14.00	0.00	16.25	2.00	30.00	6.25
Medium	32.50	16.00	40.00	21.25	36.00	7.50	33.75	22.00	28.00	31.25
High	36.25	40.00	32.00	42.50	40.00	40.00	37.50	40.00	28.00	47.50
Very high	7.50	42.00	20.00	30.00	8.00	51.25	11.25	36.00	8.00	13.75
N observations	80	50	50	80	50	80	80	50	50	80

Table E4: Questionnaire data for Experiment 4

Work Motivation	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	Control	Trust	Control	Trust	Control	Trust	Control	Trust	Control	Trust
Very low	1.96	0.00	0.79	0.00	2.38	0.00	0.00	0.00	8.73	0.98
Low	22.55	1.59	8.73	3.92	8.73	1.96	8.82	5.56	25.40	5.88
Medium	35.29	17.46	38.10	18.63	34.13	4.90	38.24	17.46	31.75	41.18
High	29.41	41.27	40.48	46.08	41.27	31.37	33.33	51.59	25.40	42.16
Very high	10.78	39.68	11.90	31.37	13.49	61.76	19.61	25.40	8.73	9.80
N observations	102	126	126	102	126	102	102	126	126	102

Table E5: Questionnaire data for Experiment 5

Work Motivation	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	Control	Trust	Control	Trust	Control	Trust	Control	Trust	Control	Trust
Very low	3.57	0.00	3.57	1.79	1.79	0.00	1.79	0.00	7.14	1.79
Low	19.64	1.79	8.93	1.79	14.29	1.79	10.71	3.57	23.21	3.57
Medium	37.50	14.29	42.86	28.57	35.71	5.36	39.29	25.00	33.93	39.29
High	30.36	39.29	30.36	39.29	37.50	35.71	33.93	44.64	25.00	44.64
Very high	8.93	44.64	14.29	28.57	10.71	57.14	14.29	26.79	10.71	10.71
N observations	56	56	56	56	56	56	56	56	56	56

Appendix F. Distributions of transfer pairs

On the horizontal axis we denote the amount transferred in the no-control condition and on the vertical axis we denote the amount transferred in the control condition. The size of bubbles is proportional to the number of transfer pairs. The few transfer pairs that include a transfer of more than 40 ECUs are clustered on the right side of the plot.

Figure F1: Distributions of transfer pairs from agents to principals in Experiments 1, 4 and 5

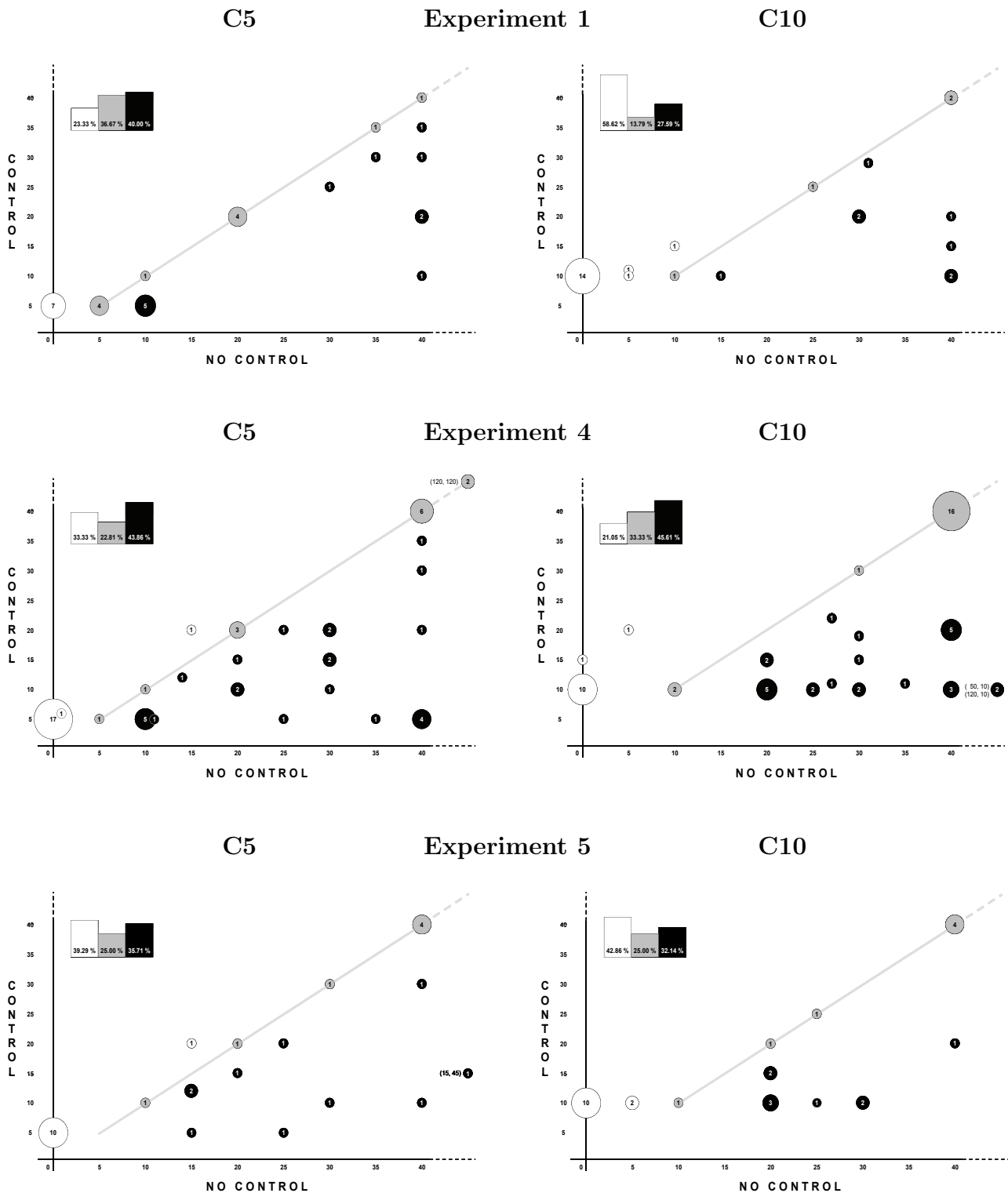


Figure F2: Distributions of transfer pairs from agents to principals in Experiments 2 and 3, and in F&K's C5 and C10 treatments

