Appendix: EXPERIMENT INSTRUCTIONS (CPR with Punishment)

This is an experiment on decision making. If you read the following instructions carefully, you can, depending on your decisions, earn a considerable amount of money. All earnings on your computer screens are in Experimental Dollars. These Experimental Dollars will be converted to real Dollars at the end of the experiment, at a rate of _____ Experimental Dollars = 1 real Dollar.

Today's session will be conducted using the computer network located here in this laboratory. It will be divided into 10 different periods. Attached to these instructions you will find a sheet labeled Personal Record Sheet, which will help you keep track of your earnings based on the decisions you might make. You are not to reveal this information to anyone. It is your own private information.

You have been assigned to a group of four (yourself and three other) participants. This will be your group for the entire session.

The First Stage

At the beginning of each period each participant receives an endowment of 12 tokens. In **Stage 1** each period you (and the others in your group) must decide how many tokens to place into either or both of 2 accounts: a private account and a group account. All tokens must be placed in one account or the other. Each token you place in the private account generates a return to you (independent of what anyone else does), and each token you place in the group account generates a return that depends on how many tokens that others in your group place in the group account. Your earnings in a period are the sum of your earnings from the private account and your earnings from the group account, minus 12. Returns to the two accounts are listed on your input screen as shown on the next page. Everybody has the same returns.

You and all the other members of your group will each get a share of the total group earnings that depends on your token placements. If a total of X tokens are placed in the group account by group members, then the total group payoff is $18X-0.4X^2$ Experimental Dollars. For example, if a total of 10 tokens are placed in the group account, the total group payoff is $(18{\times}10)-(0.4{\times}100)=180-40=140$. This amount, along with every other possible total token placement in the group account are shown on your input screen below.

Your share of this total group payoff equals your number of tokens placed in the group account as a fraction of the total tokens you and the others in your group place in the group

account. For example, if a total of 10 tokens are placed in the group account, and you placed 2 of these 10 tokens, then you receive 2/10=0.2 of the 140 total group payoff, or 0.2×140=28.

Your private account generates a return to you that depends only on your tokens placed in the private account. In particular, you will receive 2 Experimental Dollars for each token that you place in your private account.

You will indicate your decisions on the input-screen for the first stage:

Period

1 out of 10

Remaining time [sec]: 24

Tokens in your private account	Your earnings from your private account
0	0.0
1	2.0
2	4.0
3	6.0
4	8.0
5	10.0
6	12.0
7	14.0
8	16.0
9	18.0
10	20.0
11	22.0
12	24.0
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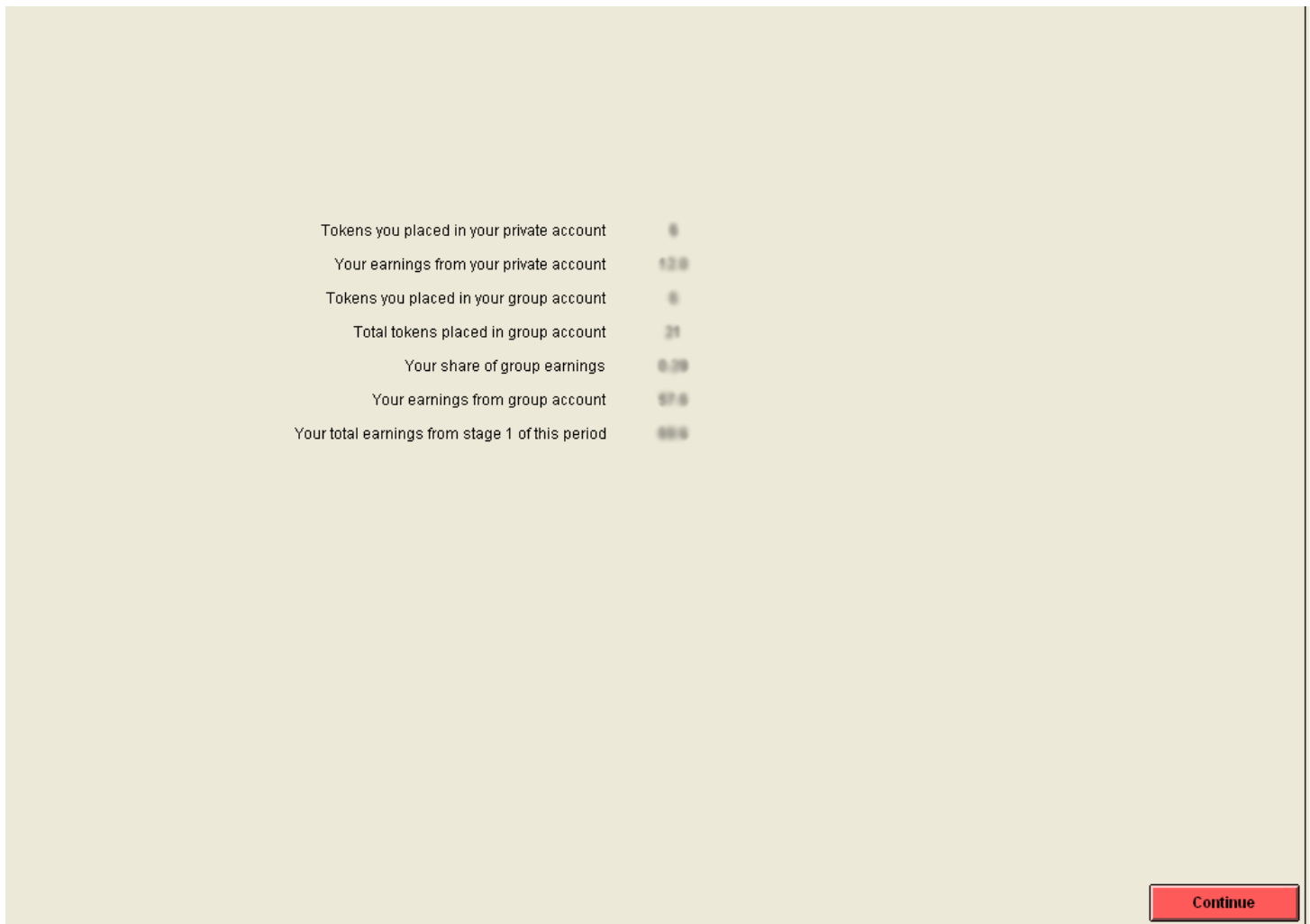| Tokens in Group Account	Total Group Earnings	Tokens in Group Account	Total Group Earnings
0	0.0	25	200.0
1	17.6	26	197.6
2	34.4	27	194.4
3	50.4	28	190.4
4	65.6	29	185.6
5	80.0	30	180.0
6	93.6	31	173.6
7	106.4	32	166.4
8	118.4	33	158.4
9	129.6	34	149.6
10	140.0	35	140.0
11	149.6	36	129.6
12	158.4	37	118.4
13	166.4	38	106.4
14	173.6	39	93.6
15	180.0	40	80.0
16	185.6	41	65.6
17	190.4	42	50.4
18	194.4	43	34.4
19	197.6	44	17.6
20	200.0	45	0.0
21	201.6	46	-18.4
22	202.4	47	-37.6
23	202.4	48	-57.6
24	201.6	---	---

Tokens I place in my private account

Tokens I place in my group account

Continue

Since your endowment each period is 12 tokens, the two numbers you indicate on your input-screen must be whole numbers between 0 and 12 and must sum to 12. After entering your decision you must press the **Continue** button. Once you have done this, your decision has been made and cannot be changed.

After all participants in your group have made their decisions the following income screen will show you the total amount of tokens placed in the group account by all four participants of your group (including you). Also this screen shows your earnings for the first stage of the period. Your earnings are the sum of your earnings from the private account and your earnings from the group account. During the experiment you will record this information on your hardcopy record sheet and then click the **Continue** button.

Detail of Results Screen for First Stage

Tokens you placed in your private account	6
Your earnings from your private account	12.0
Tokens you placed in your group account	6
Total tokens placed in group account	21
Your share of group earnings	0.29
Your earnings from group account	57.6
Your total earnings from stage 1 of this period	69.6

Continue

The Second Stage each Period

In the second stage you will see the amount of tokens placed in the group account by all four participants of your group. Moreover, in this stage you can decide whether to **decrease** the

earnings of these others in your group by assigning **deduction points**. These other participants can also decrease your earnings if they wish to. This is apparent from the input screen at the second stage, shown below.

Your allocation to the group account is displayed **in the first column**, while the allocations to the group account **by the other people** are shown in the **remaining three columns**. Note that the order in which others' allocations are displayed will be determined at random in every period. The allocation in the second column, for example, could represent a different person in different periods. The same holds true for the other two columns.

You will have to decide how many deduction points to assign to **each** of these other three participants in your group. You must enter a number for each of them. If you do not wish to change the earnings of a person in your group then you must enter 0. You can **assign up to 5 points to each participant**.

You will incur costs from assigning deduction points. Every deduction point you assign costs you 1 Experimental Dollar. For example, if you assign 2 deduction points to one person, this costs you 2 Experimental Dollars; if, in addition, you assign 4 deduction points to another person this costs you an additional 4 Experimental Dollars. In total for this example you will have assigned 6 points and your **total costs** therefore amount to 6 Experimental Dollars.

After you have assigned points to each of the other three participants you can click the button "**Calculate**" (see the second stage input screen). On the screen you will then see the total costs of your assigned points. As long as you have not yet clicked the **Continue** button, you can still change your decision. To recalculate the costs after a change of your assigned points, simply press the "Calculate" button again.

If you assign 0 deduction points to a particular participant (i.e., enter "0"), you will not alter his or her earnings. However, if you assign **one deduction point** to a participant you will **decrease** his or her earnings by **3 Experimental Dollars**. If you assign a participant **2 deduction points** you will **decrease** his or her earnings by **6 Experimental Dollars**, and so on. Each deduction point that you assign to another person will reduce his or her earnings by 3 Experimental Dollars. Similarly, each deduction point assigned to you by another participant will reduce your first stage earnings by 3 Experimental Dollars:

Costs of received deduction points = 3 × Sum of received deduction points.

How much the earnings at the second stage are decreased depends on the sum of deduction points received. For instance, if somebody receives **a total** of **3 deduction points** (from all other participants in this period), his or her earnings would be decreased by **9 Experimental Dollars**. If somebody receives a total of **4 deduction points,** his or her earnings are reduced by **12 Experimental Dollars**.

Your total earnings from the two stages are therefore calculated as follows:

Total earnings at the end of the second stage = period earnings =
= Earnings from the first stage – 3 × (sum of received deduction points)
    – (sum of deduction points you have assigned) – 12

Note that everyone has a fixed amount of 12 Experimental Dollars subtracted every period.

After all participants have made their decision, your earnings from the period will be displayed on a screen such as the one shown below. After you have viewed the earnings screen the period is over and the next period commences. Recall that 10 periods will be conducted.

Recording Rules

During every period you should write down the information shown on your results screens on your Personal Record Sheet. The Stage 1 results screen shows the group account allocations you should record, and the final earnings screen shows your Deduction Points and period earnings. Be sure to record your total earnings for each period in the rightmost column.

Summary

1. All subjects use the same Earnings Tables.
2. In each period, you and every other participant will each have 12 tokens to allocate.
3. In each period, you will decide how many tokens to place in your private account and how many to place in your group account. You must allocate all 12 tokens each period.
4. Your earnings from the private account depend only on your decision about how many tokens to place in this account.
5. Your earnings from the group account depend upon how many tokens you and the other three participants of your group place in this account. You receive a share of group earnings that depends the fraction of the total tokens in the group account that you placed in the group account.
6. You may assign up to 5 Deduction Points to each of the other individuals in your group. Each Point you assign costs you 1 Experimental Dollars.
7. These other individuals can assign Deduction Points to you. Each Point assigned to you reduces your earnings by 3 Experimental Dollars.
8. You will interact with the same 3 other individuals for all decision periods.
9. Results and earnings should be recorded on your Record Sheet at the end of each period.

Detail of Earnings Screen at the end of the Second Stage:

Your Payoff after the First Stage   ●●●

Amount of Received Deduction Points   ●

Payoff Reduction through Deduction Points   -●

Amount of Assigned Deduction Points   ●

Your Cost of Assigning Deduction Points   -●

Fixed amount subtracted for the Period   -●●

Your Payoff for the Period is   ●●●

Your Total Cumulative Payoff so far is   ●●●

Continue

Personal Record Sheet

Period Number	My Tokens in Private Account	My Earnings from Private Account	My Tokens in Group Account	Total Tokens in Group Account	My Share of Group Earnings	My Earnings from Group Account	My Total Earnings from Stage 1	Amount of Received Deduction Points	Payoff Reduction through Deduction Points	Cost of Assigning Deduction Points	Payoff for the Period	Cumulative Payoff so far
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												