

Appendix for

**“Gun For Hire: Does Delegated Enforcement Crowd out
Peer Punishment in Giving to Public Goods?”**

By James Andreoni and Laura Gee

Supplemental Material
Not Intended for Publication

1. Instructions for the treatments with a baseline of the linear public goods (LPG) game
2. Instructions for the treatments with a baseline of the peer to peer (P2P) game.
3. Samples of computer screens seen by subjects.

Instructions for the treatments with
a baseline of the linear public goods (LPG) game

Welcome to the Economics Study!

This experiment is a study of group and individual investment behavior. The instructions are simple. If you follow them carefully and make good investment decisions then you may earn a considerable amount of money. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

The experiment will last about an hour.

The Experiment

You have been organized into groups of 4 people. Each group will consist of 4 different randomly assigned persons in each period. There will be 20 **periods** in this session. In each period you will be required to make some decisions and what you earn from each decision will depend on what you and the other 3 people in your group decide.

Once all your decisions in the 20 periods have been made, we will randomly select one of the 20 periods as the **period-that-counts**. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make your decision in each period as if it will be the period-that-counts.

First, we will describe the instructions for the first 10 periods.

First 10 Periods: Investment Decision

At the beginning of each period you will be randomly assigned to a new group of 4 players, and you will be given an automatic payment of \$1.00.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

THE RED INVESTMENT

Each token you invest in the **RED** investment will earn you a return of **\$3.00**.

Example: Suppose you invest 4 tokens in the **RED** investment, then you would earn **\$ 12.00** from this investment.

Example: Suppose you invest 0 tokens in the **RED** investment, then you would earn **\$ 0.00** from this investment.

THE BLUE INVESTMENT

What you earn from the **BLUE** investment will depend on the total number of tokens that you and the other 3 members of your group invest in the **BLUE** investment. The more the group invests in the **BLUE** investment, the more each member of the group earns.

Each token you invest in the **BLUE** investment will earn you and all your group members a return of **\$2.00**.

The process is best explained by a number of examples.

Example: Suppose that you decided to invest no tokens in the **BLUE** investment but that the 3 other members invest a total of 9 tokens. Then your earnings from the **BLUE** investment would be **\$18.00** (which is 9 tokens multiplied by \$2.00). Everyone else in your group would also earn **\$ 18.00**.

Example: Suppose that you invest 2 tokens in the **BLUE** investment and that the 3 other members of your group invest a total of 9 tokens. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$22.00** (which is 11 tokens multiplied by \$2.00). The other 3 members of the group would also get a return of **\$ 22.00**.

Example: Suppose that you invest 3 tokens in the **BLUE** investment and the other 3 members invest nothing. Then you, and everyone else in the group, would get a return from the **BLUE** investment of **\$6.00** (which is 3 tokens multiplied by \$ 2.00).

As you can see, every token invested in the **BLUE** investment will earn **\$2.00** for every member of the group, not just the person who invests it there. *It does not matter who invests tokens in the **BLUE** investment. Everyone will get a return from every token invested there—whether they invest tokens in the **BLUE** investment or not.*

YOUR TASK

Your task is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment. You are free to invest some of your tokens in the **RED** investment and some in the **BLUE** investment. Alternatively, you can invest all of them into the **RED** investment or all of them into the **BLUE** investment.

Earnings

Once you and the other 3 members of your group have made your decisions, you will receive an **Earnings Statement** for that period. You will be given anonymous details of all your group's investments and earnings.

Your earnings have been computed using the following simple formula:

$$\text{1}^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (\text{Your investment to the } \text{RED} \text{ investment}) + (\$2.00) * (\text{Total group investments to the } \text{BLUE} \text{ investment})$$

For example imagine you invested 4 to the **BLUE** investment, your other group members invest 2, 3, and 3 to the **BLUE** investment.

In this example 1st stage earnings are computed as follows:

$$\text{1}^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (5-4) + (\$2.00) * (4 + 2 + 3 + 3)$$
$$\text{1}^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (1) + (\$2.00) * (12)$$
$$\text{1}^{\text{st}} \text{ Stage Earnings} = \$3.00 + \$24.00$$
$$\text{1}^{\text{st}} \text{ Stage Earnings} = \$ 27.00$$

Your earnings will be your 1st Stage earnings plus your \$1.00 automatic payment. You will also be given a summary of your current and previous earnings.

You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.

Your Group

For each decision period you will be in a group of 4 people in the room today. **After each decision period we will randomly re-match you with a new group of 4 people in the room.** As a result, each decision you make will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

After 10 periods of this one stage investment decision, you will be given directions for another type of decision.

Things to remember

- You will be in a group of 4 people
- You will have automatic earnings of \$1.00 each period
- You will have 5 tokens to invest each period
- Each token you invest in the **RED** investment earns you **\$3.00**
- Each token you invest in the **BLUE** investment earns you and every member of your group **\$2.00**
- There will be a total of 10 decision periods.
- The groups will be randomly re-matched every decision period.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

Thank you.
Please wait to be told when you can begin making decisions
for the first 10 periods.

The instructions used in period 11-20
for the LPG-G4H treatment

Next 10 Periods: Two Stage Investment Decision

Stage 1: Administrator Fund

At the beginning of each period you will be randomly assigned to a new group of 4 players. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

In Stage 1 you will receive 4 tokens. You will be asked to invest in an Administration Fund in Stage 1. You may enter any investment from zero up to 4 tokens. Investments in excess of 4 tokens will not be accepted. Each token you do not invest in the Administration Fund can be exchanged for \$0.25.

Once all 4 members of your group have entered their choice of investment in the Administration Fund, the sum of these investments will be computed. If your group reaches the **threshold of 8 or more tokens**, then your group will hire a *computer simulated Administrator*.

ADMINISTRATOR

If your group is overseen by a *computer simulated Administrator*, the Administrator will examine the number of tokens you invest in the **BLUE** investment in Stage 2. The computer-simulated Administrator may take a deduction from your payoff according to certain rules which we will go over in detail in a few minutes. For now, it is most important for you to know that the computer-simulated Administrator will take a deduction from the lowest investor to the **BLUE** investment in your group.

In Stage 1 you and your other group members will decide how much to invest in the Administration Fund. Your decision along with your other 3 group members will determine if your group hires a computer simulated Administrator.

Stage 1 Earnings & Administrator Hiring

Now we will go through some examples of the Stage 1 decision and the resulting earnings.

Example: Suppose you invest 4 tokens in the Administration Fund. The other players in your group invest a total of 5 tokens. Then total investments are 9, which is greater than the threshold of 8. In the 2nd stage your group will be monitored by a computer simulated Administrator, and so the lowest investor to the **BLUE** investment in your group will have a payoff deduction. You invested all 4 of your tokens, and the Administration Fund threshold was met, so your payoff from Stage 1 is \$0.00 (0 tokens multiplied by \$0.25).

Example: Suppose you invest 3 tokens in the Administration Fund. The other players in your group invest a total of 4 tokens. Then total investments in the Administration Fund are 7, which is less than the threshold of 8, so there will be no payoff deductions in Stage 2. When the Administration Fund threshold is not met, then your investment of 3 tokens to the Administration Fund will be given back to you---so you will get back the 3 tokens you had at the beginning of Stage 1. Your payoff from these tokens will be \$1.00 (4 multiplied by \$0.25).

Example: Suppose you invest 1 token in the Administration Fund. The other players in your group invest a total of 9 tokens. Then total investments in the Administration Fund are 10, which is greater than the threshold of 8. In the 2nd stage your group will be monitored by a computer simulated Administrator, and so the lowest investor to the **BLUE** investment in your group will have a payoff deduction. You invested 1 of your tokens in the Administration Fund, so you must have kept 3 of your 4 Stage 1 tokens. Each token kept will be exchanged for \$0.25, so your payoff from Stage 1 will be \$0.75 (3 multiplied by \$0.25).

Your payoff from Stage 1 is computed using the following simple formula.

If the group investments to the Administration Fund *meets or exceeds* the threshold of 8 tokens:

$$1^{\text{st}} \text{ Stage Earnings} = (\$0.25) * (4 - \text{Your investment to the Administration Fund})$$

If the group investments to the Administration Fund are *less than* the threshold of 8 tokens:

$$1^{\text{st}} \text{ Stage Earnings} = (\$0.25) * (4) = \$1.00$$

You must make your investment decisions without knowing what the others in your group are deciding. *Do not discuss your decision with any other participant*

At the end of Stage 1, you will be informed whether your group has hired a computer simulated Administrator for Stage 2.

Stage 2: Investment Decision

Stage 2 is very similar to the decision you made in the first 10 periods, and will only differ if a computer simulated Administrator was hired in Stage 1.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

THE RED INVESTMENT

Each token you invest in the RED investment will earn you a return of \$3.00.

THE BLUE INVESTMENT

Each token you invest in the BLUE investment will earn you a return of \$2.00 for you and all the members of your group.

You will be reminded whether your group met the administration threshold during this period. If your group's total investments to the Administration Fund in Stage 1 exceeded the threshold then the lowest investor to the BLUE investment will have a deduction taken from their payoff.

ADMINISTRATOR

If your group is overseen by a *computer-simulated* Administrator, the Administrator will examine the number of tokens you invest in the BLUE investment. The computer-simulated Administrator may take a deduction from your payoff according to these rules:

1. Only the lowest investor (or investors in case of a tie) to the BLUE investment will have a deduction taken from their payoff by the Administrator.
2. The size of the deduction will depend on the investment choices of your group members. The deduction will be the difference between the payoff of the lowest investor and the payoff of the second lowest investor to the BLUE investment in your group plus \$3.00.
3. If there is a tie for the lowest investor, all those who tied will have the deduction taken from their payoff.
4. If all 4 members of your group tie for the lowest investor, then all of you will have \$3.00 taken from your payoffs.
5. If all members of your group allocate the whole of their 5 tokens to the BLUE investment, then no one will have a deduction taken from their payoffs.

Thus, when the Administrator has been hired the only way you can avoid having a deduction is to avoid being the lowest investor to the BLUE investment. When the Administrator has been hired, the only way everyone in the group can avoid a deduction is if everyone invests all 5 tokens to the BLUE investment.

If the Administrator was not hired, then no deductions will be taken from anyone's earnings. In this case, things will proceed with the same rules used in the first 10 periods of today's study.

Earnings: If Administration Fund threshold is met

Example: Suppose that you invest 3 tokens in the **RED** investment and 2 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 4, 4, and 1 tokens in the **BLUE** investment respectively. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be \$22.00. The other 3 members of the group would also get a return of \$ 22.00 from the **BLUE** investment. Your initial payoff from this stage would be:

$$3 * (\$3.00) + (2 + 4 + 4 + 1) * (\$2.00) = \$ 31.00$$

You invested 2 tokens to the **BLUE** investment, while another player invested only 1 token, so you are **not** the lowest investor to the **BLUE** investment. Thus, you will **not** have a payoff deduction. Your earnings for Stage 2 of this period will be your initial earnings of \$31.00.

Example: Suppose that you invest 3 tokens in the **RED** investment and 2 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 3, 4, and 2 tokens in the **BLUE** investment respectively. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be \$22.00. The other 3 members of the group would also get a return of \$22.00 from the **BLUE** investment. Your initial payoff from this stage would be:

$$3 * (\$3.00) + (2 + 3 + 4 + 2) * (\$2.00) = \$ 31.00$$

You invested 2 tokens to the **BLUE** investment, so you and the other player that invested 2 tokens tied for being the lowest investors to the **BLUE** investment. Thus, you (and the other player that invested only 2 in the **BLUE** investment) will have a payoff deduction. The size of the deduction will be \$3.00 plus the difference between your initial earnings and the next lowest investor in the **BLUE** investment. The next lowest investor in your group invested 3 tokens in the **BLUE** investment and earned \$ 28.00. In this example that would mean your deduction would be \$3.00 + (\$31.00 - \$ 28.00) = \$6.00. Your Stage 2 net earnings will be your initial earnings of \$31.00 minus your deduction of \$6.00, which in total equals \$25.00. You will be told that you were the lowest investor when your period earnings are reported to you.

Example: Suppose that you invest 0 tokens in the **RED** investment and 5 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment respectively. This makes a group total of 20 tokens. Your return from the **BLUE** investment would be \$40.00. The other 3 members of the group would also get a return of \$40.00 from the **BLUE** investment.

Everyone invested *all* their 5 tokens to the **BLUE** investment, so there is no lowest investor to the **BLUE** investment. In this specific case even though there is a computer simulated Administrator, no one will have a payoff deduction. Your payoff for Stage 2 of this period will be \$40.00.

Earnings: If Administration Fund threshold is not met

If your group did not meet the threshold of 8 tokens, then Stage 2 will be *exactly the same* as the investment decision in the first 10 periods. No one will have a deduction taken from their payoffs. Your Stage 2 earnings for the last 10 periods are computed by the following formula:

If the group investments to the Administration Fund *meet or exceed* the threshold of 8 tokens:

$$\text{2nd Stage Earnings} = (\$3.00) * (\text{Your investment to the RED investment}) + (\$2.00) * (\text{Total group investments to the BLUE investment}) - (\text{Payoff Deduction if you are the lowest investor to the BLUE investment})$$

If the group investments to the Administration Fund are *less than* the threshold of 8 tokens:

$$\text{2nd Stage Earnings} = (\$3.00) * (\text{Your investment to the RED investment}) + (\$2.00) * (\text{Total group investments to the BLUE investment})$$

Your Group

A decision period consists of Stage 1 and Stage 2. For each decision period you will be in a group of 4 people in the room today. This means you will be in the same group of people during Stage 1 and Stage 2, and then **after the end of stage 2 in that decision period we will randomly rematch you with a new group of 4 people in the room.** As a result, each period you will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

Your Earnings

Once all your decisions in the 20 periods have been made, we will randomly select one of the 20 periods as the period-that-counts. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make all your decision in each period as if it will be the period-that-counts.

Things to Remember

- This part of the study will have two stages. In the Stage 1 you and your other group members will decide whether to hire a computer-simulated Administrator by investing in an Administration Fund.
 - If your group investment in the Administration Fund meets or exceeds 8 tokens, then in Stage 2 there will be an Administrator.
 - The Administrator will be responsible for taking a deduction from the earnings of the lowest investor in the **BLUE** investment.
 - The deduction will equal to (the earnings of the lowest **BLUE** investor) – (the earnings of the second lowest **BLUE** investor) + \$3.00.
 - If several people are tied for the lowest investor, all will receive a deduction from their earnings.
 - If all people in the group invest all 5 tokens in the **BLUE** investment, then no one will receive a deduction.
 - On the other hand, if your group investment in the Administration Fund is below 8 tokens, then Stage 2 will be exactly like the first 10 periods, so there will be no computer simulated Administrator.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question

Thank you.
Please wait to be told when you can begin making decisions
for the next 10 periods.

The instructions used in period 11-20
for the LPG-P2P treatment

Next 10 Periods: Two Stage Investment Decision

Stage 1 is exactly the same as the decision you made in the first 10 periods. At the beginning of each period you will be randomly assigned to a new group of 4 players, and you will be given an automatic payment of \$1.00.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

1. THE RED INVESTMENT

Each token you invest in the RED investment will earn you a return of \$3.00.

2. THE BLUE INVESTMENT

Each token you invest in the BLUE investment will earn you and all your group members a return of \$2.00.

Stage 1 Earnings

Once you and the other members of your group have made your decisions, you will receive an Earnings Statement for that period. Your earnings have been computed using the following simple formula:

$$1^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (\text{Your contribution to the RED investment}) + (\$2.00) * (\text{Total group contributions to the BLUE investment})$$

Stage 2: Decision

At the beginning of Stage 2 of each decision period you will be informed about how much each group member contributed to the BLUE investment and their initial earnings at the end of the Stage 1. Moreover, during Stage 2 you can **change** or **leave unchanged** the earnings of each of the other members of your group by assigning **deduction points**. The other group members can also reduce **your** earnings, if they so wish.

You now have to decide how many deduction points to give to each of the other group members. You must enter a number for each of them. If you do not want to change the earnings of a particular group member, you enter 0. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points to a certain group member, you do not change the earnings of this group member. If however, you assign 1 deduction point to a group member, you reduce that group member's earnings by \$3.00.

Example: Suppose you assign 2 deduction points to player 1 this costs you \$2.00 and reduces player 1's income by \$6.00.

Example: Suppose you assign 0 deduction points to player 1 this costs you \$0.00 and reduces player 1's income by \$0.00.

Example: Suppose you assign 1 deduction point to player 1, 2 deduction points to player 2, and 3 deduction points to player 3. That is a total of 6 deduction points (6=1+2+3) that you assigned to other players. This costs you \$6.00 and reduces player 1's income by \$3.00, reduces player 2's income by \$6.00, reduces player 3's income by \$9.00.

Example: Suppose player 1 assigns 0 deduction point to you, player 2 assigns 1 deduction point to you, and player 3 assigns 3 deduction points to you. That means in total you were assigned 4 deduction points (4=0+1+3) by the other players in your group. This will lower your payoff by \$12.00 (4 deduction points multiplied by \$3.00).

Earnings

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

Total Earnings at the end of the period = 1st stage Earnings – Total of Deductions you receive – Cost of Deductions you give

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay your \$0.00 for this period. You cannot owe us money at the end of the session.

You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.

Your Group

For each decision period you will be in a group of 4 people in the room today. **After each decision period we will randomly rematch you with a new group of 4 people in the room.** As a result, each decision you make will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

Your Earnings

Once all your decisions in the 20 periods have been made, we will randomly select one of the 20 periods as the period-that-counts. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make all your decision in each period as if it will be the period-that-counts.

Things to Remember

- You will be in a group of 4 people
- The groups will be randomly re-matched every decision period.
- You will have automatic earnings of \$1.00 each period
- This part of the study will be like the first 10 rounds, but with a second stage added after the investment decision.
- In Stage 2 you can reduce the earnings of other members of your group by assigning deduction points.
- You pay \$1.00 for each deduction point.
- Each deduction point you assign to another group member will reduce their earnings by \$3.00.
- If your period earnings are negative we will pay you \$0.00 for this period.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

Thank you.

**Please wait to be told when you can begin making decisions
for the next 10 periods.**

Instructions for the treatments with
a baseline of the peer to peer punishment (P2P) game

Welcome to the Economics Study!

This experiment is a study of group and individual investment behavior. The instructions are simple. If you follow them carefully and make good investment decisions then you may earn a considerable amount of money. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

The experiment will last about an hour.

The Experiment

You have been organized into groups of 4 people. Each group will consist of 4 different randomly assigned persons in each period. There will be 20 **periods** in this session. In each period you will be required to make some decisions and what you earn from each decision will depend on what you and the other 3 people in your group decide.

Once all your decisions in the 20 periods have been made, we will randomly select one of the 20 periods as the **period-that-counts**. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make your decision in each period as if it will be the period-that-counts.

First, we will describe the instructions for the first 10 periods.

First 10 Periods: Two Stage Investment Decision

Stage 1: Investment Decision

At the beginning of each period you will be randomly assigned to a new group of 4 players, and you will be given an automatic payment of \$1.00.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

THE RED INVESTMENT

Each token you invest in the **RED** investment will earn you a return of **\$3.00**.

Example: Suppose you invest 4 tokens in the **RED** investment, then you would earn **\$12.00** from this investment.

Example: Suppose you invest 0 tokens in the **RED** investment, then you would earn **\$0.00** from this investment.

THE BLUE INVESTMENT

What you earn from the **BLUE** investment will depend on the total number of tokens that you and the other 3 members of your group invest in the **BLUE** investment. The more the group invests in the **BLUE** investment, the more each member of the group earns.

Each token you invest in the **BLUE** investment will earn you and all your group members a return of **\$2.00**.

The process is best explained by a number of examples.

Example: Suppose that you decided to invest no tokens in the **BLUE** investment but that the 3 other members invest a total of 9 tokens. Then your earnings from the **BLUE** investment would be **\$18.00** (which is 9 tokens multiplied by \$2.00). Everyone else in your group would also earn **\$18.00**.

Example: Suppose that you invest 2 tokens in the **BLUE** investment and that the 3 other members of your group invest a total of 9 tokens. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$22.00** (which is 11 tokens multiplied by \$2.00). The other 3 members of the group would also get a return of **\$22.00**.

Example: Suppose that you invest 3 tokens in the **BLUE** investment and the other 3 members invest nothing. Then you, and everyone else in the group, would get a return from the **BLUE** investment of **\$6.00** (which is 3 tokens multiplied by \$2.00).

As you can see, every token invested in the **BLUE** investment will earn **\$2.00** for every member of the group, not just the person who invests it there. *It does not matter who invests tokens in the **BLUE** investment. Everyone will get a return from every token invested there—whether they invest tokens in the **BLUE** investment or not.*

YOUR TASK

Your task is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment. You are free to invest some of your tokens in the **RED** investment and some in the **BLUE** investment. Alternatively, you can invest all of them into the **RED** investment or all of them into the **BLUE** investment.

Earnings

Once you and the other 3 members of your group have made your decisions, you will receive an **Earnings Statement** for that period. You will be given anonymous details of all your group's investments and earnings.

Your earnings have been computed using the following simple formula:

$$1^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (\text{Your investment to the } \mathbf{RED} \text{ investment}) + (\$2.00) * (\text{Total group investments to the } \mathbf{BLUE} \text{ investment})$$

For example imagine you invested 4 to the **BLUE** investment, your other group members invest 2, 3, and 3 to the **BLUE** investment.

In this example 1st stage earnings are computed as follows:

$$1^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (5-4) + (\$2.00) * (4 + 2 + 3 + 3)$$

$$1^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (1) + (\$2.00) * (12)$$

$$1^{\text{st}} \text{ Stage Earnings} = \$3.00 + \$24.00$$

$$1^{\text{st}} \text{ Stage Earnings} = \$ 27.00$$

Your earnings will be your 1st Stage earnings plus your \$1.00 automatic payment. You will also be given a summary of your current and previous earnings.

You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.

Stage 2: Decision

At the beginning of Stage 2 of each decision period you will be informed about how much each group member contributed to the **BLUE** investment, **RED** investment and their initial earnings at the end of the Stage 1. Moreover, during Stage 2 you can **change** or **leave unchanged** the earnings of each of the other members of your group by assigning **deduction points**. The other group members can also reduce **your** earnings, if they so wish.

You now have to decide how many deduction points to assign to each of the other group members. You must enter a number for each of them. If you do not want to change the earnings of a particular group member, you enter 0. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points to a certain group member, you do not change the earnings of this group member. If however, you assign 1 deduction point to a group member, you reduce that group member's earnings by \$3.00.

Example: Suppose you assign 2 deduction points to player 1. This costs you \$2.00 and reduces player 1's income by \$6.00.

Example: Suppose you assign 0 deduction points to player 1. This costs you \$0.00 and reduces player 1's income by \$0.00.

Example: Suppose you assign 1 deduction point to player 1, 2 deduction points to player 2, and 3 deduction points to player 3. That is a total of 6 deduction points ($6=1+2+3$) that you assigned to other players. This costs you \$6.00 and reduces player 1's income by \$3.00, reduces player 2's income by \$6.00, reduces player 3's income by \$9.00.

Example: Suppose player 1 assigns 0 deduction point to you, player 2 assigns 1 deduction point to you, and player 3 assigns 3 deduction points to you. That means in total you were assigned 4 deduction points ($4=0+1+3$) by the other players in your group. This will lower your payoff by \$12.00 (4 deduction points multiplied by \$3.00).

Earnings

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

Total Earnings at the end of the period = 1st stage Earnings – Total of Deductions you receive – Cost of Deductions you give

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay your \$0.00 for this period. You cannot owe us money at the end of the session.

You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.

Your Group

For each decision period you will be in a group of 4 people in the room today. **After each decision period we will randomly rematch you with a new group of 4 people in the room.** As a result, each decision you make will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

Things to Remember

- You will be in a group of 4 people
- The groups will be randomly re-matched every decision period.
- You will have automatic earnings of \$1.00 each period
- In Stage 2 you can reduce the earnings of other members of your group by assigning deduction points.
- You pay \$1.00 for each deduction point.
- Each deduction point you assign to another group member will reduce their earnings by \$3.00.
- If your period earnings are negative we will pay you \$0.00 for this period.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

Thank you.

**Please wait to be told when you can begin making decisions
for the next 10 periods.**

The instructions used in period 11-20
for the P2P-P2P treatment

Next 10 Periods: Two Stage Investment Decision

Your session has been chosen to do the same task in Periods 11-20, as you did in the first 10 periods. So, the last 10 periods will be exactly the same as the first 10 periods. We will take a moment now to review the instructions.

At the beginning of each period you will be randomly assigned to a new group of 4 players, and you will be given an automatic payment of \$1.00.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

1. THE RED INVESTMENT

Each token you invest in the RED investment will earn you a return of \$3.00.

2. THE BLUE INVESTMENT

Each token you invest in the BLUE investment will earn you and all your group members a return of \$2.00.

Stage 1 Earnings

Once you and the other members of your group have made your decisions, you will receive an Earnings Statement for that period. Your earnings have been computed using the following simple formula:

$$1^{\text{st}} \text{ Stage Earnings} = (\$3.00) * (\text{Your contribution to the RED investment}) + (\$2.00) * (\text{Total group contributions to the BLUE investment})$$

Stage 2: Decision

At the beginning of Stage 2 of each decision period you will be informed about how much each group member contributed to the BLUE investment and their initial earnings at the end of the Stage 1. Moreover, during Stage 2 you can **change** or **leave unchanged** the earnings of each of the other members of your group by assigning **deduction points**. The other group members can also reduce **your** earnings, if they so wish.

You now have to decide how many deduction points to give to each of the other group members. You must enter a number for each of them. If you do not want to change the earnings of a particular group member, you enter 0. If you assign deduction points, there will be a cost for each deduction point that you assign. Each deduction point costs you \$1.00.

If you assign 0 deduction points to a certain group member, you do not change the earnings of this group member. If however, you assign 1 deduction point to a group member, you reduce that group member's earnings by \$3.00.

Earnings

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

$$\text{Total Earnings at the end of the period} = \text{1st stage Earnings} - \text{Total of Deductions you receive} - \text{Cost of Deductions you give}$$

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay your \$0.00 for this period. You cannot owe us money at the end of the session. At minimum you will be paid \$7 for today's session.

You must make your investment decisions without knowing what the others in your group are deciding. *Do not discuss your decision with any other participant.*

Your Group

For each decision period you will be in a group of 4 people in the room today. **After each decision period we will randomly rematch you with a new group of 4 people in the room.** As a result, each decision you make will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

Your Earnings

Once all your decisions in the 20 periods have been made, we will randomly select one of the 20 periods as the period-that-counts. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make all your decision in each period as if it will be the period-that-counts.

Things to Remember

- You will be in a group of 4 people
- The groups will be randomly re-matched every decision period.
- You will have automatic earnings of \$1.00 each period
- This part of the study will be exactly like the first 10 periods.
- In Stage 2 you can reduce the earnings of other members of your group by assigning deduction points.
- You pay \$1.00 for each deduction point.
- Each deduction point you assign to another group member will reduce their earnings by \$3.00.
- If your period earnings are negative we will pay you \$0.00 for this period.
- At minimum you will be paid \$7 for today's session.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

Thank you.

**Please wait to be told when you can begin making decisions
for the next 10 periods.**

The instructions used in period 11-20
for the P2P-P2P/G4H treatment

Next 10 Periods: Investment Decision with Administrator Hiring

Stage 1: Administrator Fund

If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

At the beginning of each period you will be randomly assigned to a new group of 4 players. In Stage 1 you will receive 4 tokens. You will be asked to invest in an Administration Fund in Stage 1. You may enter any investment from zero up to 4 tokens. Investments in excess of 4 tokens will not be accepted. Each token you do not invest in the Administration Fund can be exchanged for \$0.25.

Once all 4 members of your group have entered their choice of investment in the Administration Fund, the sum of these investments will be computed. If your group reaches the **threshold of 8 or more tokens**, then your group will hire a *computer simulated Administrator*.

ADMINISTRATOR

If your group is overseen by a *computer simulated Administrator*, the Administrator will examine the number of tokens you invest in the **BLUE** investment in Stage 2. The computer-simulated Administrator may take a deduction from your payoff according to certain rules which we will go over in detail in a few minutes. For now, it is most important for you to know that the computer-simulated Administrator will take a deduction from the lowest investor to the **BLUE** investment in your group.

In Stage 1 you and your other group members will decide how much to invest in the Administration Fund. Your decision along with your other 3 group members will determine if your group hires a computer simulated Administrator.

Stage 1 Earnings & Administrator Hiring

Now we will go through some examples of the Stage 1 decision and the resulting earnings.

Example: Suppose you invest 4 tokens in the Administration Fund. The other players in your group invest a total of 5 tokens. Then total investments are 9, which is greater than the threshold of 8. In the 2nd stage your group will be monitored by a computer simulated Administrator, and so the lowest investor to the **BLUE** investment in your group will have a payoff deduction. You invested all 4 of your tokens, and the Administration Fund threshold was met, so your payoff from Stage 1 is \$0.00 (0 tokens multiplied by \$0.25).

Example: Suppose you invest 3 tokens in the Administration Fund. The other players in your group invest a total of 4 tokens. Then total investments in the Administration Fund are 7, which is less than the threshold of 8, so there will be no payoff deductions in Stage 2. When the Administration Fund threshold is not met, then your investment of 3 tokens to the Administration Fund will be given back to you---so you will get back the 3 tokens you had at the beginning of Stage 1. Your payoff from these tokens will be \$1.00 (4 multiplied by \$0.25).

Example: Suppose you invest 1 token in the Administration Fund. The other players in your group invest a total of 9 tokens. Then total investments in the Administration Fund are 10, which is greater than the threshold of 8. In the 2nd stage your group will be monitored by a computer simulated Administrator, and so the lowest investor to the **BLUE** investment in your group will have a payoff deduction. You invested 1 of your tokens in the Administration Fund, so you must have kept 3 of your 4 Stage 1 tokens. Each token kept will be exchanged for \$0.25, so your payoff from Stage 1 will be \$0.75 (3 multiplied by \$0.25).

Your payoff from Stage 1 is computed using the following simple formula.

If the group investments to the Administration Fund *meets or exceeds* the threshold of 8 tokens:

$$1^{\text{st}} \text{ Stage Earnings} = (\$0.25) * (4 - \text{Your investment to the Administration Fund})$$

If the group investments to the Administration Fund are *less than* the threshold of 8 tokens:

$$1^{\text{st}} \text{ Stage Earnings} = (\$0.25) * (4) = \$1.00$$

You must make your investment decisions without knowing what the others in your group are deciding. *Do not discuss your decision with any other participant*

At the end of Stage 1, you will be informed whether your group has hired a computer simulated Administrator for Stage 2.

Stage 2: Investment Decision

Stage 2 is very similar to the decision you made in the first 10 periods.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

THE RED INVESTMENT

Each token you invest in the RED investment will earn you a return of \$3.00.

THE BLUE INVESTMENT

Each token you invest in the BLUE investment will earn you a return of \$2.00 for you and all the members of your group.

You will be reminded whether your group met the administration threshold during this period. If your group's total investments to the Administration Fund in Stage 1 exceeded the threshold then the lowest investor to the BLUE investment will have a deduction taken from their payoff.

ADMINISTRATOR

If your group is overseen by a *computer-simulated* Administrator, the Administrator will examine the number of tokens you invest in the BLUE investment. The computer-simulated Administrator may take a deduction from your payoff according to these rules:

1. Only the lowest investor (or investors in case of a tie) to the BLUE investment will have a deduction taken from their payoff by the Administrator.
2. The size of the deduction will depend on the investment choices of your group members. The deduction will be the difference between the payoff of the lowest investor and the payoff of the second lowest investor to the BLUE investment in your group plus \$3.00.
3. If there is a tie for the lowest investor, all those who tied will have the deduction taken from their payoff.
4. If all 4 members of your group tie for the lowest investor, then all of you will have \$3.00 taken from your payoffs.
5. If all members of your group allocate the whole of their 5 tokens to the BLUE investment, then no one will have a deduction taken from their payoffs.

Thus, when the Administrator has been hired the only way you can avoid having a deduction is to avoid being the lowest investor to the BLUE investment. When the Administrator has been hired, the only way everyone in the group can avoid a deduction is if everyone invests all 5 tokens to the BLUE investment.

If the Administrator was not hired, then no deductions will be taken from anyone's earnings.

Earnings: If Administration Fund threshold is met

Example: Suppose that you invest 3 tokens in the **RED** investment and 2 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 4, 4, and 1 tokens in the **BLUE** investment respectively. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$22.00**. The other 3 members of the group would also get a return of **\$ 22.00** from the **BLUE** investment. Your initial payoff from this stage would be:

$$3 * (\$3.00) + (2 + 4 + 4 + 1) * (\$2.00) = \$ 31.00$$

You invested 2 tokens to the **BLUE** investment, while another player invested only 1 token, so you are **not** the lowest investor to the **BLUE** investment. Thus, you will **not** have a payoff deduction. Your earnings for Stage 2 of this period will be your initial earnings of \$31.00.

Example: Suppose that you invest 3 tokens in the **RED** investment and 2 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 3, 4, and 2 tokens in the **BLUE** investment respectively. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$22.00**. The other 3 members of the group would also get a return of **\$22.00** from the **BLUE** investment. Your initial payoff from this stage would be:

$$3 * (\$3.00) + (2 + 3 + 4 + 2) * (\$2.00) = \$ 31.00$$

You invested 2 tokens to the **BLUE** investment, so you and the other player that invested 2 tokens tied for being the lowest investors to the **BLUE** investment. Thus, you (and the other player that invested only 2 in the **BLUE** investment) will have a payoff deduction. The size of the deduction will be \$3.00 plus the difference between your initial earnings and the next lowest investor in the **BLUE** investment. The next lowest investor in your group invested 3 tokens in the **BLUE** investment and earned \$ 28.00. In this example that would mean your deduction would be $\$3.00 + (\$31.00 - \$ 28.00) = \6.00 . Your Stage 2 net earnings will be your initial earnings of \$31.00 minus your deduction of \$6.00, which in total equals \$25.00. You will be told that you were the lowest investor when your period earnings are reported to you.

Example: Suppose that you invest 0 tokens in the **RED** investment and 5 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment respectively. This makes a group total of 20 tokens. Your return from the **BLUE** investment would be **\$40.00**. The other 3 members of the group would also get a return of **\$40.00** from the **BLUE** investment.

Everyone invested **all** their 5 tokens to the **BLUE** investment, so there is no lowest investor to the **BLUE** investment. In this specific case even though there is a computer simulated Administrator, no one will have a payoff deduction. Your payoff for Stage 2 of this period will be \$40.00.

Earnings: If Administration Fund threshold is not met

If your group did not meet the threshold of 8 tokens, then in Stage 2 no one will have a deduction taken from their payoffs. Your Stage 2 earnings for the last 10 periods are computed by the following formula:

If the group investments to the Administration Fund *meet or exceed* the threshold of 8 tokens:

$$\text{2nd Stage Earnings} = (\$3.00) * (\text{Your investment to the RED investment}) + (\$2.00) * (\text{Total group investments to the BLUE investment}) - (\text{Payoff Deduction if you are the lowest investor to the BLUE investment})$$

If the group investments to the Administration Fund are *less than* the threshold of 8 tokens:

$$\text{2nd Stage Earnings} = (\$3.00) * (\text{Your investment to the RED investment}) + (\$2.00) * (\text{Total group investments to the BLUE investment})$$

Stage 3: Deduction Points Decision

At the beginning of Stage 3 of each decision period you will be informed about how much each group member contributed to the **BLUE** investment their initial earnings, the size of any Administrator Deductions and the Earnings minus these Administrator deductions at the end of the Stage 2.

Moreover, during Stage 3 you can **change** or **leave unchanged** the earnings of each of the other members of your group by assigning **deduction points**. The other group members can also reduce **your** earnings, if they so wish.

You now have to decide how many deduction points to give to each of the other group members. You must enter a number for each of them. If you do not want to change the earnings of a particular group member, you enter 0. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points to a certain group member, you do not change the earnings of this group member. If however, you assign 1 deduction point to a group member, you reduce that group member's earnings by \$3.00.

Thus, Stage 3 earnings can be computed by the following formula:

If the group investments to the Administration Fund *meet or exceed* the threshold of 8 tokens:

Stage 3 Earnings = **(\$3.00)***(Your investment to the **RED** investment) + **(\$2.00)***(Total group investments to the **BLUE** investment) – (Payoff Deduction if you are the lowest investor to the **BLUE** investment) – (Total of Deductions you receive) – (Cost of Deductions you give)

If the group investments to the Administration Fund are *less than* the threshold of 8 tokens:

Stage 3 Earnings = **(\$3.00)***(Your investment to the **RED** investment) + **(\$2.00)***(Total group investments to the **BLUE** investment) – (Total of Deductions you receive) – (Cost of Deductions you give)

Costs

At the end of each decision period you will also be informed about the costs of that your group as a whole paid for the Administrator, and Deduction Points. These will be broken down as follows:

- You will be told how much money your group spent to hire an Administrator.
- You will be told the sum of the Administrator deductions in your group.
- You will be told how much money your group spent on purchasing deduction points.
- You will be told how much money was taken away from your group as a result of the assignment of deduction points.

Your Group

A decision period consists of Stage 1, Stage 2 and Stage 3. For each decision period you will be in a group of 4 people in the room today. This means you will be in the same group of people during Stage 1 2 and 3, and then **after the end of Stage 3, we will randomly rematch you with a new group of 4 people in the room for the next decision period.** As a result, each period you will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

Your Earnings

Once all your decisions in the 20 periods have been made, we will randomly select one of the 20 periods as the period-that-counts. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make all your decision in each period as if it will be the period-that-counts.

Things to Remember

- This part of the study will have three stages.
- In the Stage 1 you and your other group members will decide how to allocate 4 Stage 1 tokens toward an Administration Fund.
 - If your group investment in the Administration Fund meets or exceeds 8 tokens, then in Stage 2 there will be an Administrator.
 - The Administrator will be responsible for taking a deduction from the earnings of the lowest investor in the BLUE investment.
 - The deduction will equal to (the earnings of the lowest BLUE investor) – (the earnings of the second lowest BLUE investor) + \$3.00.
 - If several people are tied for the lowest investor, all will receive a deduction from their earnings.
 - If all people in the group invest all 5 tokens in the BLUE investment, then no one will receive a deduction.
 - On the other hand, if your group investment in the Administration Fund is below 8 tokens, then in Stage 2 there will be no computer simulated Administrator.
- In Stage 2 you and your group members will choose how to invest 5 Stage 2 tokens in the RED and the BLUE investment, and a computer simulated may take a deduction from your group.
- In Stage 3, **you** can reduce the earnings of other members of your group by assigning deduction points.
 - You pay \$1.00 for each deduction point.
 - Each deduction point you assign to another group member will reduce their earnings by \$3.00.
 - If your period earnings are negative we will pay you \$0.00 for this period. At minimum you will be paid \$7.00 for today's study.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question

Thank you.
Please wait to be told when you can begin making decisions
for the next 10 periods.

Hired Gun Screenshots

LPG (1)

Period

1 out of 10

You have 5 tokens for this stage of the study.

You also have been given \$1.00 for participating in this period. This amount will be added to your final payment.

Tokens in the **RED** investment earn \$3.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$2.00 for you and for **all your other group members**.

Use the box to indicate how many of your 5 tokens will be invested in the **RED** investment.

Use the box to indicate how many of your 5 tokens will be invested in the **BLUE** investment.

LPG (2)

Period

1 out of 10

Player	RED investment:	BLUE investment:	Initial Earnings
Player 1	5	0	35.00
Player 2	0	5	20.00
Player 3	3	2	29.00
You	2	3	26.00
Total		10	

OK

LPG (3)

Period

1 out of 10

RESULTS (Stage 1 of 1):

RED investment: 2

BLUE investment: 3

Total Tokens in BLUE investment: 10

Automatic Payment: 1.00

Your Earnings This Period: 27.00

Period	Automatic Payment:	RED Investment	BLUE Investment	Total Tokens In BLUE Investment	Earnings
1	1.00	2	3	10	27.00

OK

P2P(1)

Period

1 of 10

Stage 1 of 2

You are in a new group of 4 people.

You have 5.0 tokens for your Stage 1 endowment.

You also have been given 1.00 dollar for participating in this period. You may not do anything with these dollars, but they will be added to your final payment.

Tokens in the **RED** investment earn \$3.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$2.00 for you and for **all your other group members**.

Use the box to decide how many of your 5.0 tokens will be invested in the **RED** investment.

Use the box to decide how many of your 5.0 tokens will be invested in the **BLUE** investment.

P2P(2)

Period

1 of 10

RESULTS (Stage 1 of 2):

RED investment:	2
BLUE investment:	3
Total Tokens in BLUE investment:	10
Stage 1 Earnings	26.00

OK

P2P(3)

Period

1 of 10

You can assign a deduction of \$3.00 to any other player by paying \$1.00 to assign 1 deduction point to that player.
You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).
To assign no deduction points enter 0. Enter your deduction points in the boxes provided.

Player	RED investment:	BLUE investment:	Stage 1 Earnings	Deduction Points
Player 1	0	5	20.00	<input type="text"/>
You	3	2	29.00	
Player 3	2	3	26.00	<input type="text"/>
Player 4	5	0	35.00	<input type="text"/>
Total		10		

Your can afford to purchase this many deduction points: 29

OK

P2P(3)

Period															
1 of 10															
<p>RESULTS (Stage 2 of 2):</p> <table><tr><td>Stage 1 Earnings</td><td>29.00</td></tr><tr><td>Your Automatic Payment:</td><td>1.00</td></tr><tr><td>Cost of punishment you assigned to other players</td><td>3.00</td></tr><tr><td>Income reduction (assigned to you by other players)</td><td>15.00</td></tr><tr><td>Your final payoff this period is:</td><td>12.00</td></tr></table> <p>[1.00 + 29.00 - 3.00 - 15.00 = 12.00]</p>						Stage 1 Earnings	29.00	Your Automatic Payment:	1.00	Cost of punishment you assigned to other players	3.00	Income reduction (assigned to you by other players)	15.00	Your final payoff this period is:	12.00
Stage 1 Earnings	29.00														
Your Automatic Payment:	1.00														
Cost of punishment you assigned to other players	3.00														
Income reduction (assigned to you by other players)	15.00														
Your final payoff this period is:	12.00														
<table><tr><td>Your group spent this amount on buying deduction points this Period:</td><td>18.00</td></tr><tr><td>Your group lost this amount to deductions this Period:</td><td>54.00</td></tr></table>						Your group spent this amount on buying deduction points this Period:	18.00	Your group lost this amount to deductions this Period:	54.00						
Your group spent this amount on buying deduction points this Period:	18.00														
Your group lost this amount to deductions this Period:	54.00														
Period	Automatic Payment:	Stage 1 Earnings	Cost of punishment you assigned	Income reduction	Final payoff										
1	1.00	29.00	3.00	15.00	12.00										
<input type="button" value="OK"/>															

G4H(1)

Period

1 out of 10

Stage 1 of 2

You are in a new group of 4 people.

You have 4 tokens for your Stage 1 endowment.

You can choose between keeping these tokens or investing them in an Administration Fund. For each token you keep you will earn \$0.25.

Each token you invest in the Administration Fund will go toward meeting or exceeding your group's threshold of 8 tokens.

A. If your group's total investments in the Administration Fund are 8 or more tokens then in Stage 2 your group will hire an Administrator.

NOTE: Automatic Rules followed by Administrator if hired

1. Only the lowest investor(s) to the BLUE investment will have a deduction taken from their payoff by the Administrator.
2. The size of the deduction will be \$3.00 plus the difference between the payoff of the lowest contributor and the payoff of the second lowest contributor to the BLUE investment in your group.
3. If there is a tie for the lowest contributor, all those who tied will have the deduction taken from their payoff.
4. If all 4 members of your group tie for the lowest contributor, then all of you will have \$3.00 taken from your payoffs.
5. If all members of your group in Stage 2 allocate the whole of their Stage 2 endowment to the BLUE investment no one will have a deduction taken from their payoffs.

B. If your group investments in the Administration Fund are less than 8, then in Stage 2 your group will not hire an Administrator.

In this case, your investment to the Administration Fund will be given back to you.

NOTE: If no Administrator is hired, the rules for Stage 2 will be the same as in the first 10 periods of today's session.

Use the box below to indicate how many of your 4 tokens you will invest in the Administration Fund.

OK

G4H(2)

Period

1 out of 10

RESULTS (Stage 1):

Your investment in the Administration Fund:	2
Total group investment in the Administration Fund:	8

Your group's total investment of 8 met or exceeded the threshold of 8, so your group will hire an Administrator for Stage 2.

You kept 2 tokens, in total your Stage 1 earnings are (in dollars):	0.50
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G4H(3)

Period

1 out of 10

Stage 2 of 2

You have 5 tokens for your Stage 2 endowment.

Recall your group's **Administrator will take a deduction** from the lowest investor to the **BLUE** investment.

Tokens in the **RED** investment earn \$3.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$2.00 for you and for **all your other group members**.

Use the box to indicate how many of your 5 tokens will be invested in the **RED** investment.

Use the box to indicate how many of your 5 tokens will be invested in the **BLUE** investment.

OK

G4H(4) - lowest

Period

1 out of 10

Player	RED investment:	BLUE investment:	Initial Earnings	Deduction	Initial Earnings - Deduction
Player 1	3	2	29.00	0.00	29.00
Player 2	0	5	20.00	0.00	20.00
You	5	0	35.00	9.00	26.00
Player 4	2	3	26.00	0.00	26.00
Total		10			

OK

G4H (5) - lowest

Period

1 out of 10

You were the lowest BLUE investor this period, and so a deduction of \$9.00 has been taken from your Stage 2 earnings.

RESULTS (Stage 2 of 2):

- RED investment: 5
- BLUE investment: 0
- Total Tokens in BLUE investment: 10
- Stage 1 Earnings: 0.50
- Initial Stage 2 Earnings: 35.00
- Deduction:** 9.00
- Net Stage 2 Earnings: 26.00
- Your Earnings This Period: 26.50

Period	Stage 1 Earnings	RED Investment	BLUE Investment	Total Tokens In BLUE investment	Initial Stage 2 Earnings	Amount of Deduction	Net Stage 2 Earnings	Stage 1 + Stage 2 Earnings
1	0.50	5	0	10	35.00	9.00	26.00	26.50

OK

G4H/P2P (1)

Period

1 out of 10

You are in a new group of 4 people.
You have 4 tokens for your Stage 1 endowment.
You can choose between keeping these tokens or investing them in an Administration Fund. For each token you keep you will earn \$0.25.

Each token you invest in the Administration Fund will go toward meeting or exceeding your group's threshold of 8 tokens.

A. If your group's total investments in the Administration Fund are 8 or more tokens then in Stage 2 your group will hire an Administrator.

NOTE: Automatic Rules followed by Administrator if hired

1. Only the lowest investor(s) to the BLUE investment will have a deduction taken from their payoff by the Administrator.
2. The size of the deduction will be \$3.00 plus the difference between the payoff of the lowest contributor and the payoff of the second lowest contributor to the BLUE investment in your group.
3. If there is a tie for the lowest contributor, all those who tied will have the deduction taken from their payoff.
4. If all 4 members of your group tie for the lowest contributor, then all of you will have \$3.00 taken from your payoffs.
5. If all members of your group in Stage 2 allocate the whole of their Stage 2 endowment to the BLUE investment no one will have a deduction taken from their payoffs.

B. If your group investments in the Administration Fund are less than 8, then in Stage 2 your group will not hire an Administrator.
In this case, your investment to the Administration Fund will be given back to you.

NOTE: If no Administrator is hired, there will be no Administrator Deduction taken from any of your group members.

Use the box below to indicate how many of your 4 tokens you will invest in the Administration Fund.

OK

G4H/P2P (2)

Period

1 out of 10

RESULTS:

Your investment in the Administration Fund:	2
Total group investment in the Administration Fund:	8

Your group's total investment of 8 met or exceeded the threshold of 8, so your group will hire an Administrator for Stage 2.

You kept 2 tokens, in total your Stage 1 earnings are (in dollars):	0.50
---	------

OK

G4H/P2P (3)

Period

1 out of 10

You have 5 tokens for this stage of the study.

Recall your group's **Administrator will take a deduction** from the lowest investor to the **BLUE** investment.

Tokens in the **RED** investment earn \$3.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$2.00 for you and for **all your other group members**.

Use the box to indicate how many of your 5 tokens will be invested in the **RED** investment.

Use the box to indicate how many of your 5 tokens will be invested in the **BLUE** investment.

OK

G4H/P2P (4) – not lowest

Period

1 out of 10

You can assign a deduction of \$3.00 to any other player by paying \$1.00 to assign 1 deduction point to that player.
You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).
To assign no deduction points enter 0. Enter your deduction points in the boxes provided.

There was an Administrator Deduction this period.

Player	RED investment:	BLUE investment:	Initial Earnings	Administrator Deduction	Initial Earnings - Administrator Deduction	Deduction Points
Player 1	0	5	20.00	0.00	20.00	<input type="text"/>
Player 2	2	3	26.00	0.00	26.00	<input type="text"/>
You	3	2	29.00	0.00	29.00	
Player 4	5	0	35.00	9.00	26.00	<input type="text"/>
Total		10				

You can afford to purchase this many deduction points: 29.00

OK

G4H/P2P (5) – not lowest

Period

1 out of 10

You were not the lowest **BLUE** investor this period, and so the Administrator took nothing from your earnings.

RESULTS:

RED investment: 3
 BLUE investment: 2
 Total Tokens in BLUE investment: 10
 Stage 1 Earnings: 0.50
 Initial Stage 2 Earnings: 29.00
Administrator Deduction: 0.00
 Initial Earnings - Administrator Deduction: 29.00
 Cost of punishment you assigned to other players: 3.00
 Income reduction (assigned to you by other players): 3.00
 Your Earnings This Period: 23.50
 [0.50 + 29.00 - 0.00 - 3.00 - 3.00 = 23.50]

Your group spent the equivalent of this amount of money hiring an Administrator this Period: 2.00
 Your Administrator took this amount of money from your group this Period: 9.00
 Your group spent this amount on buying deduction points this Period: 6.00
 Your group lost this amount to deductions this Period: 18.00

Period	Stage 1 Earnings	RED Investment	BLUE Investment	Total Tokens In BLUE Investment	Initial Stage 2 Earnings	Administrator Deduction	Initial Earnings - Administrator Deduction	Cost of punishment you assigned	Income reduction by others	Final Earnings
1	0.50	3	2	10	29.00	0.00	29.00	3.00	3.00	23.50

OK