Appendix A: Instructions from the SLM experiment (Experiment 1)

This experiment is a study of group decision making.

There is NO deception in the experiment: if we tell you that we are going to do something, we will do it exactly as described.

The experiment will consist of 20 rounds. In each round of the experiment you will be placed into a group of 5 players. In each round, you and the other members of your group will make a decision on the size of a group investment. Your decision and the decisions of the others will determine how much money you earn.

**Your decision** is how much to contribute to the group investment. You can contribute $1 to $20. We label this contribution $m_i$. The size of the investment, $x$, is determined by taking the sum of the contributions by the members of your group. That is, $x = \sum_i m_i$.

**Your payoff from an investment** $x$ is $v_i \ln(x)$. Your value multiplier $v_i$ is different in each round and is different for each person in your group. Your multiplier $v_i$ can range from $1$ to $20$. This is true for every person. Later in the instructions we will provide earnings graphs so you don't need to do any calculation of your own.

**To summarize**: Your earnings in one round will be computed as

\[
\text{Earnings} = \text{investment payoff} - \text{your contribution}
\]
\[ v_i \ln \left( \sum_k m_k \right) - m_i \]

At the end of the instructions we provide some graphs showing your average or expected earnings for different multipliers \( v_i \), investments \( x \), and contributions \( m_i \).

You will be paid your average total earnings from all 20 rounds. Your average earnings will be displayed at the end of every round.

Procedure:
In each round you will first see a decision screen. On this screen you will see your value multiplier for that round. This multiplier changes from round to round, and is randomly drawn from $1 to $20.

Below your value multiplier, we ask you to report your contribution. Use the number keys to type in a number between 1 and 20 and click the red “Make Offer” button to submit your contribution. If you enter a value outside this range then the screen will refresh and you will be asked again to enter your contribution. You can use the “Backspace” key if you make a mistake while typing. This screen will look as follows:
After you’ve made your choice on this screen you will be told the total group contribution and your earnings for that round, as well as your average earnings from all the rounds so far. This screen will look as follows:
After you hit continue on this screen the next round will begin.

On the next pages are graphs showing your earnings as a function of your contribution and the contributions of the other players. Each graph is for a different value of your multiplier. On the x-axis is your contribution, and each line represents a different sized contribution from the other four players:

**QUIZ:**

Next you will answer a short quiz to ensure that you understand the instructions above.

If a statement is ‘False’, please rewrite the statement in a way that makes it ‘True’.

**Question 1:** True or False: Your multiplier value for the investment is the same every round.

**Question 2:** True or False: To determine your multiplier value (and the multiplier values of other players) we randomly choose an amount from $1 to $20.

**Question 3:** How many rounds are there? To determine your final earnings do we take the sum of the earnings from those rounds, or the average earnings from those rounds?

**Question 4:** True or False: There are some situations where you can get higher earnings by contributing something other than your multiplier value.
Appendix B: Instructions from the ALM experiment (Experiment 1)

This experiment is a study of group decision making.

There is NO deception in the experiment: if we tell you that we are going to do something, we will do it exactly as described.

The experiment will consist of 20 rounds. In each round of the experiment you will be placed into a group of 5 players. In each round, you and the other members of your group will make a decision on the size of a group investment. Your decision and the decisions of the others will determine how much money you earn.

Your decision is how much to contribute to the group investment. You can contribute $1 to $20. We label this contribution $m_i$. The size of the investment, $x$, is determined by taking the sum of the contributions by the members of your group. That is, $x = \Sigma_i m_i$.

Your payoff from an investment $x$ is $v_i \cdot \ln(x)$. Your value multiplier $v_i$ is different in each round and is different for each person in your group. Your multiplier $v_i$ can range from $1$ to $20$. This is true for every person. Later in the instructions we will provide earnings graphs so you don’t need to do any calculation of your own.

In each round, a computer will randomly guess your multiplier, $v_i$, in a way that is related to the actual value for $v_i$. The guess will be drawn from a uniform distribution that ranges from +/- $10$ of your multiplier. For example, if your multiplier was $12$, then the computer would be equally likely to guess a number anywhere from $2$ to $22$. You will be charged a tax based on the computer’s guess, $g_i$, and your contribution, $m_i$. Your tax will be $t(g_i, m_i) = (g_i - m_i)^2$. Note that you pay the lowest tax when the computer’s guess ($g_i$) and your contribution ($m_i$) are the same.
We will take these taxes from you and every other player in the group. We will then take the average tax paid by the other 4 players and pay that amount back to you as a refund. This refund process will happen for every player in the group.

**To summarize:** Your earnings in one round will be computed as

\[
\text{Earnings} = \text{investment payoff} - \text{your contribution} - \text{tax} + \text{refund}
\]

\[
= v_i \ln(\sum_k m_k) - m_i - [(g_i - m_i)^2] + \frac{1}{4} \sum_{k \neq i} t_k
\]

At the end of the instructions we provide some graphs showing your average or expected earnings for different multipliers \(v_i\), investments \(x\), and contributions \(m_i\). Note that you don’t have any influence on your refund, it is entirely dependent on the contributions of the other people in the group.

You will be paid your average total earnings from all 20 rounds. If your total earnings are negative then that amount will be deducted from your show-up fee. At the end of every round you will be told your computer guess, tax, refund, and earnings from that round, as well as the contributions of the other four people in your group.

**Procedure:**
In each round you will first see a decision screen. On this screen you will see your value multiplier for that round. This multiplier changes from round to round, and is randomly drawn from $1 to $20.

Below your value multiplier, we ask you to report your contribution. Use the number keys to type in a number between 1 and 20 and click the red “Make Offer” button to submit your contribution. If you enter a value outside this range then the screen will refresh and you will be asked again to enter your contribution. You can use the “Backspace” key if you make a mistake while typing. This screen will look as follows:
After you’ve made your choice on this screen you will be told the total group contribution, your tax, your refund, and your earnings for that round, as well as your average earnings from all the rounds so far. This screen will look as follows:
After you hit continue on this screen the next round will begin.

**Strategy:**

The investment payoff, contribution, tax and refund are all parts of your total earnings for a given round. To help you understand why the payoffs and taxes are the way they are, we will now highlight a few key points. When we talk about your average or expected earnings, we mean averaging across the different amounts you might earn depending on the computer’s guess about your multiplier.

(1) Given the distribution of the computer’s guess, the taxes are chosen so that on average you make the most money by contributing an amount equal to your value multiplier, regardless of the multipliers, contributions, or computer guesses of the other players. If you make some other contribution in a round, your average or expected earnings for that round will be lower than if you had contributed your multiplier value.
(2) If you contribute your multiplier value, your average earnings will always be positive. However, if you contribute a different amount, your average or expected earnings can become negative.

On the next pages are graphs showing your average earnings as a function of your contribution and the contributions of the other players. Each graph is for a different value of your multiplier. On the x-axis is your contribution, and each line represents a different sized contribution from the other four players. As you can see, your highest average earnings occur when your contribution is equal to your multiplier value:

**QUIZ:**

Next you will answer a short quiz to ensure that you understand the instructions above.

If a statement is ‘False’, please rewrite the statement in a way that makes it ‘True’.

Question 1: True or False: Your multiplier value for the investment is the same every round.

Question 2: True or False: To determine your multiplier value (and the multiplier values of other players) we randomly choose an amount from $1 to $20.

Question 3: How many rounds are there? To determine your final earnings do we take the sum of the earnings from those rounds, or the average earnings from those rounds?

Question 4: True or False: There are some situations where you can get higher average or expected earnings by contributing something other than your actual multiplier value.
Appendix C: Instructions from risk/loss aversion experiment (Experiment 2)

This experiment is a study of group decision-making.

There is NO deception in the experiment: if we tell you that we are going to do something, we will do it exactly as described.

There will be two rounds in this experiment. In both rounds of the experiment you will be in a group of 5 people (four others and yourself) who have to decide whether to make a group investment. Each person in the group receives a different value from the investment if it is made. In one round your value for the investment will be $1 and in the other your value will be $9. The values of the other people in your group are also either $1 or $9. Their values are independent of each other— that is, each person’s value is equally likely to be $1 or $9 regardless of how many other people have $9 or $1 values. To fill your group, we will randomly select rounds from the other people in the experiment and use the decisions they made in those rounds.

The two decisions you make

In both rounds you will make two decisions after you find out your value. Your decisions, and the decisions of the others in your group, will determine whether the group makes the investment, and will determine how much money you might earn. Next we will describe the decisions you make. Then we will explain how the decisions of the people in your group lead to the money you can earn.

The first decision is to report whether your value is $1 or $9. You can report your actual value accurately, or report the opposite value from the one you have.

Your second decision is whether to vote YES or NO to make the investment.
You will not be told any information about the choices of others in your group between decisions or rounds.

**How decisions determine your earnings**

Your earnings are determined by two steps:

**When the investment is not made**

The first step is whether the group decides to make the investment. If the investment is not made, everyone in your group earns nothing in that round.

The investment will not be made if either of two situations occurs.

(1) The investment has a cost to the group of $25. The investment will not be made if the total of the values that are reported by all the group members (including you) is less than $25. Since the possible values are either $1 or $9 for everyone, this means mathematically that if the number of people reporting $9 values is zero, one, or two, then the investment will not be made. If the number of people reporting $9 is three, four or five, then the investment might be made, if the second condition (below) is also satisfied.

(2) Even if three or more people report values of $9, whether the investment is made also depends on the number of YES and NO votes, and on chance. If everyone in your group votes YES the investment will certainly be made. If everyone in your group votes NO, the investment will certainly not be made. In general, the percentage chance that the investment will be made is 20% times the number of YES votes. For example, if three people vote YES (and the other two people vote NO) then the chance that the investment will be made is 60%.
The table below reminds you of the percentage chances that the investment takes place for all the possible numbers of votes in your group:

<table>
<thead>
<tr>
<th>No. of YES votes</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of NO votes</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Chance the investment is made</td>
<td>0%</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>80%</td>
<td>100%</td>
</tr>
</tbody>
</table>

After the percentage chance of investment is determined by the votes, a random number will be drawn to determine whether the investment is made.

To summarize, the investment is not made if two or fewer people report values of $9, OR if there are NO votes and the chance outcome determines that no investment is made. Remember that if the investment is not made, everyone in your group earns nothing. Below is a timeline explaining this procedure graphically (with time flowing down):
Your earnings if the investment is made

If the investment is made, your earnings will depend on three numbers (and on the numbers and decisions of the others in your group):

1. Your actual value ($1 or $9)
2. What you reported about your value (in your first decision)
3. A random guess generated by the computer that is related to your actual value

The random computer guess will be equal to your actual value with an 80% probability, and will be equal to the opposite value with a 20% probability. For example, if your value is $9, then the computer guess will be $9 with 80% probability and the computer guess will be $1 with 20% probability. That means that if the computer did this 100 times, the most likely outcome would be 80 correct guesses and 20 incorrect ones.

Guesses of the values of the other four people in your group will be made independently in the same way.

If the investment is made, the first part of your earnings is just your actual value. If your actual value is $1 you get $1. If your actual value is $9 you get $9.

The second part of your earnings is an extra amount you pay or receive based on your reported value and the computer’s guess of your actual value. The possible amounts are shown in the table below. If you report $9 you pay $10 no matter what the computer guesses. If you report $1, however, you receive $7.50 if the computer guesses $1, or you pay $17.50 if the computer guesses $9.

<table>
<thead>
<tr>
<th>Computer’s guess</th>
<th>Your report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1</td>
</tr>
<tr>
<td>Guess $1</td>
<td>receive</td>
</tr>
<tr>
<td></td>
<td>$7.50</td>
</tr>
<tr>
<td>Guess $9</td>
<td>pay $17.50</td>
</tr>
</tbody>
</table>
The third part of your earnings is an extra amount you either get or pay in order to pay the $25 cost of the investment. The amounts paid by everyone in the group from the computer guess payments just described (minus the amounts received) will first be totaled up. If the total amount paid is greater than $25, then any extra money paid (above $25) will be distributed evenly back to everyone in the group. However, if the amount paid is less than $25, the extra amount needed to create a total payment of $25 will be collected evenly from the people in the group.

To summarize: If the investment is made, your earnings are the sum of three components:

1. Your actual value (either $1 or $9)
2. The additional amount you pay, or receive, which depends on your reported value and on the computer’s guess
3. The amount redistributed to everyone (if the payments from part (2) are more than $25), or collected from everyone (if the payments from part (2) are less than $25).

Your dollar earnings from the experiment will be equal to the sum of the earnings from the two rounds.

**The expected dollar earnings from voting YES and reporting your actual value**

Your choices in this experiment are whether to vote YES or NO, and whether to report your actual value ($1 or $9) or to report the opposite. The financial consequences of these decisions are rather complicated (and also depend on what others in your group do).

Therefore, it may be helpful to you to know expected cash earnings from one set of decisions you can make (also called “average” earnings). {If you are unfamiliar with
the idea of an “expected” payoff please read the footnote on the next page.\textsuperscript{1} You can make these decisions if you want to, or any other decisions you like. This section is simply designed to help you see the implications of a particular kind of strategy.

The rules and payments in this experiment are set up so that, the best way to maximize your average or expected earnings is to vote YES, and report your actual value. Making these decisions gives higher expected earnings regardless of the values, reports or computer guesses of the other people. If you report the opposite of your actual value in a round, your average or expected earnings for that round will be worse than if you had reported your actual value.

The payments are also designed so that your average or expected payoff is always positive if you report your actual value, regardless of what the other people are doing. Therefore, if you vote YES and report your actual value, your average or expected earnings will be positive. If you vote NO and report your actual value, your average or expected earnings will be positive, but closer to $0 than if you had voted YES.

\textsuperscript{1} The expected monetary payoff is the amount you would be likely to earn if you made the same decisions over and over, so that the relative frequency of chance events comes to be very close to the stated probability. For example, suppose you flip a fair coin and earn $3 if heads comes up, and lose $1 if tails comes up. If you flip many times, the percentage of times you earn $3 and the percentage of times you lose $1 would start to even out, to half and half. Then your average earnings would be .5($3)+.5(-$1), which is $1. On any one coin flip you would not earn $1—you would earn either $3 or -$1. But if you kept a running total of your average earnings it would start to get very close to $1.
The table below describes your average or expected earnings for reporting your actual value or reporting the opposite (called “misreporting”) for all the possible values and reports of the other people.

Each column represents a different set of reports by the other people in your group. Since people who report $9 pay $10 regardless of the computer’s guess, misreports by those people with actual $1 values do not affect your payoffs, so there are no separate columns for those events. So in the table, the term “misreports” always refers to people with $9 values who report $1. The table also omits the possibility that there are zero or one $9 reports because then the investment will not be made and you earn $0 no matter what you do.

The first two rows of the table show the average or expected earnings if your actual value is $9. The first row shows your average earnings if you report $9. The second row shows your average earnings if you report the opposite (reporting $1 when your actual value is $9). Notice that in every column describing what other people might do, the first row average earnings are higher than the second row average earnings.

The third and fourth rows show the average earnings when your actual value is $1 and you report $1 (the third row) or report the opposite, $9 (the fourth row). In every column the third row average earnings are higher than the fourth row average earnings. In fact, the third row is always zero or positive, and the fourth row average earnings are always negative.
The next two tables below describe your actual earnings for all the possible reports and computer guesses for you and the other four people in your group.

Each column represents a different set of reports and guesses for the other people in your group. Since people who report $9 pay $10 regardless of the computer’s guess, there is only one row when your report is $9. So in the tables, “correct” always refers to the computer’s guess about the people who report $1. Also, as in the previous table, these tables omit the possibility that there are zero or one $9 reports because then the investment will not be made and you earn $0 no matter what you do.

The first table shows your earnings if your actual value is $9. The first row (in grey) shows your earnings if you report $9. The second and third rows (in white) show your earnings if you report the opposite (reporting $1 when your actual value is $9) and the computer guesses $9 (the second row) or $1 (the third row). Keep in mind that the computer would guess $9 with a probability of 80% and $1 with a probability of 20%, as indicated in the “chance” column.

<table>
<thead>
<tr>
<th>Actual Value</th>
<th>Value Report</th>
<th>2 $9 0 Misreports</th>
<th>2 $9 1 Misreport</th>
<th>2 $9 2 Misreports</th>
<th>3 $9 0 Misreports</th>
<th>3 $9 1 Misreport</th>
<th>4 $9</th>
</tr>
</thead>
<tbody>
<tr>
<td>$9</td>
<td>$9</td>
<td>$0.40</td>
<td>$2.60</td>
<td>$4.80</td>
<td>$2.20</td>
<td>$4.40</td>
<td>$4.00</td>
</tr>
<tr>
<td>$9</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0.60</td>
<td>$2.80</td>
<td>$2.40</td>
</tr>
<tr>
<td>$1</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1.40</td>
<td>$3.60</td>
<td>$3.20</td>
</tr>
<tr>
<td>$1</td>
<td>$9</td>
<td>- $7.60</td>
<td>- $5.40</td>
<td>- $3.20</td>
<td>- $5.80</td>
<td>- $3.60</td>
<td>- $4.00</td>
</tr>
</tbody>
</table>
The second table shows your earnings when your actual value is $1. The first and second rows (in grey) show your earnings if you report $1 and the computer guesses $1 (the fourth row) or $9 (the fifth row). The third row (in white) shows your earnings if you report the opposite (reporting $9 when your actual value is $1). Keep in mind that the computer would guess $1 with a probability of 80% and $9 with a probability of 20%, as indicated in the “chance” column.

<table>
<thead>
<tr>
<th>Actual Value</th>
<th>Value Report</th>
<th>Computer Guess</th>
<th>Chance</th>
<th>2 $9 2 Correct</th>
<th>2 $9 1 Correct</th>
<th>2 $9 0 Correct</th>
<th>3 $9 1 Correct</th>
<th>3 $9 0 Correct</th>
<th>4 $9</th>
</tr>
</thead>
<tbody>
<tr>
<td>$9</td>
<td>$9</td>
<td>$9/$1</td>
<td>100%</td>
<td>-$3</td>
<td>$2</td>
<td>$7</td>
<td>$0.50</td>
<td>$5.50</td>
<td>$4</td>
</tr>
<tr>
<td>$9</td>
<td>$1</td>
<td>$9</td>
<td>80%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>-$5.50</td>
<td>-$0.50</td>
<td>-$2</td>
</tr>
<tr>
<td>$9</td>
<td>$1</td>
<td>$1</td>
<td>20%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$14.50</td>
<td>$19.50</td>
<td>$18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actual Value</th>
<th>Value Report</th>
<th>Computer Guess</th>
<th>Chance</th>
<th>2 $9 2 Correct</th>
<th>2 $9 1 Correct</th>
<th>2 $9 0 Correct</th>
<th>3 $9 1 Correct</th>
<th>3 $9 0 Correct</th>
<th>4 $9</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1</td>
<td>$1</td>
<td>$1</td>
<td>80%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$6.50</td>
<td>$11.50</td>
<td>$10</td>
</tr>
<tr>
<td>$1</td>
<td>$1</td>
<td>$9</td>
<td>20%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>-$13.50</td>
<td>-$8.50</td>
<td>-$10</td>
</tr>
<tr>
<td>$1</td>
<td>$9</td>
<td>$9/$1</td>
<td>100%</td>
<td>-$11</td>
<td>-$6</td>
<td>-$1</td>
<td>-$7.50</td>
<td>-$2.50</td>
<td>-$4</td>
</tr>
</tbody>
</table>
QUIZ:
Next you will answer a short quiz to ensure that you understand the instructions above.
If a statement is ‘False’, please rewrite the statement in a way that makes it ‘True’.

Question 1: True or False: Your value for the investment is the same every round.

Question 2: True or False: To determine the investment values of the other group members, for each one we randomly choose a value of either $9 or $1.

Question 3: True or False: Given that the computer correctly guesses your value with a probability of 80%, you will always make more money on average if you report your actual investment value.

Question 4: True or False: If you vote NO for the investment, the investment will never be made.

Question 5: True or False: Voting NO for the investment could help you avoid situations where your expected earnings are negative.

Question 6: True or False: Your actual earnings are always higher when you report your actual investment value.
Response Sheet

Please circle your decisions below for both rounds.

Your investment value is $9.

Do you report $9 or $1?

Do you vote YES or NO?

Your investment value is $1.

Do you report $9 or $1?

Do you vote YES or NO?