Supplementary Appendix for
Kamei and Putterman, 2013,
“Play it Again: An Experiment on Partner Choice, Reputation Building
and Learning in Restarting, Finitely-Repeated Dilemma Games”

This Appendix contains full sets of instructions used in Kamei and Putterman (2013).

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1. The 0% 1.3 Treatment

Instructions:
You are now participating in a decision-making experiment in which you will earn an amount of money that depends on your decisions and on the decisions of other participants. During the experiment your earnings will be calculated in points. At the end of the experiment, points will be converted to U.S. dollars at the following rate:

22.22 points = $1

(This means each point will exchange for 4.5 cents of real money)

At the end of the experiment your total earnings will be paid out to you in cash, in addition to the $5 guaranteed for your participation.

The experiment has four phases each consisting of ten periods (in total, 40 periods). Each phase is identical.

During the experiment, you will engage in a series of interactions, each of which will involve you and one other participant. Those with whom you will interact will come from a set of 10 participants, with each individual being randomly assigned to one such set. In each phase, each member of each set of 10 participants, yourself included, will be identified as Player 1, Player 2, Player 3, …, Player 10. These identification numbers are fixed for the ten periods within each phase, but when a phase ends, the numbers are randomly changed before the next phase begins. This means that the individual identified as, say, Player 7 in Phase 2 is unlikely to be the same individual as the one called Player 7 in Phase 1, although within a given phase the identifier “Player 7” always refers to the same participant.

You will make the same kinds of decisions every period. Each period consists of three stages, and the following instructions explain the details of any randomly chosen period, say period $t$, in a phase.

(a) The Ranking Stage

At the onset of period $t$, the 10 participants in your set will be randomly divided into two groups of 5. Your first task is to give ranking numbers to each of the 5 members of the other group, about whom some information will be shown. Your ranking number for an individual indicates your preference to be paired with that individual during the period’s interaction. A rank of 1
indicates your most preferred possible partner, 5 the least preferred. You must use all five potential ranks (1, 2, 3, 4, 5), giving one to each member in the group of 5 about whom you are shown information.

Once everyone has submitted their rankings, the computer will assign partners according to the following procedure. First, the computer searches for the pair of participants (always one from each of the randomly formed groups of 5) the sum of whose rankings of one another are the lowest. For example, if Player 2 gave Player 7 her rank number 1 and Player 7 also gave Player 2 his rank number 1, their sum of rank numbers is 2, which is the lowest sum possible, so unless there is a tie with some other pair of participants, Player 2 and Player 7 will be assigned to interact together in this period. Note that in this matching process, since there are 5 participants on each side, the computer calculates the sums of rankings of one another for all 25 possible combinations in order to find the first pair. Ties will be randomly broken by the computer. Once the first pair is found, the computer repeats the procedure for the remaining four participants in each group (in total eight participants in each set), and so on, until each participant has been paired with a participant in the other group of five. Note that sets of 10 remain the same for the entire experiment, but groups of 5 are randomly formed anew each period, their function being only to facilitate the formation of the pairs that will interact in that period.

Information at the Ranking Stage

The decisions that you will be making in the last stage of each interaction involve the allocation of a set of points between two accounts, referred to as a private account and a joint account. Details on how the allocation decisions that you and your counterpart make affect your earnings will be explained below. For now, we focus on the fact that during the ranking stage, your screen will display each potential partner’s player number. If you recall the choice or choices made by a given individual during past interactions with you in the current phase, you may use that information to help you to decide what rankings to give. (You are free to write notes on the instruction sheets or scrap paper, to help with recall.) Remember, however, that the Player numbers change randomly from one phase to the next, so an interaction you had with, say, Player 5 during Phase 1 conveys no information whatsoever about the individual referred to as Player 5 in Phase 2. Also keep in mind that you will begin each phase with no information about any specific member of your set (although the same nine others are always in the set); you are nevertheless required to assign rankings.
An example of the computer screen appears below:

Once all participants submit their five ranks, the computer will make the partner assignments and will indicate which of the five potential counterparts has been paired with you for this period. Note that there are a variety of reasons why you may not end up with your first choice of partners, for example, the individual you ranked first may not have ranked you first. However, the process that has been described, in which mutual preference is the main factor determining matching, with ties broken randomly, is the only determinant of who you are assigned to interact with.
An example of the computer screen appears below:

(b) Allocation Stage

Once all participants have seen their assignments and clicked the <<Continue>> button, you will move on to the allocation stage. In this stage, you and your counterpart will each be given an endowment of 10 points. Then, you and he or she will simultaneously decide how to use your respective point endowments. There are two possibilities:

1. You can allocate points to a joint account.
2. You can allocate points to a private account.

For simplicity, you will be asked to indicate the number of points you want to allocate to the joint account. Only integers between 0 and 10 are allowed for this purpose. The remaining points will be automatically allocated to your private account. Your earnings depend on the total number of points in the joint account, and the number of points in your private account.

Your earnings from your private account are equal to the number of points you allocate to that account.
Your earnings from the joint account depend on the sum of points allocated to the joint account by you and your counterpart. Specifically, the total points placed in the joint account are multiplied by a factor of 1.3 and then divided equally between you and your counterpart, meaning that each of you receives 0.65 times the total points the two of you allocate to that account.

In summary, your earnings can be calculated with the following formula:

\[
10 - \text{(points you allocated to the joint account)} + 0.65 \times \text{(sum of points allocated by you and your counterpart to the joint account)}
\]

In the last page of the instructions, there is a table that shows all possible combinations of allocations and earnings. From it, you can tell your and your counterpart’s earnings for each possible set of allocation decisions. Please take some time to study this table carefully before the decision-making portion of the experiment begins so that you will have a clear sense of how your own and your counterpart’s decisions interact to determine your respective earnings. You may wish to keep the table in front of you for your reference when that portion of the experiment is in progress.

At the time you make an allocation decision, your counterpart’s player number appears on the computer screen.
(c) Post-Allocation Stage

When all participants have made their allocation decisions, you will see a screen telling you the allocation decision of your counterpart and the number of points you have earned in this period.

An example of the computer screen:
Now that we’ve explained the ranking of prospective counterparts, counterpart assignment, allocation decisions, and their consequences, for each period, it is useful to review the overall structure of the experiment.

As mentioned at the outset, you will interact with those in the set of ten participants to which you’ve been randomly assigned for a total for 40 periods. Those 40 periods are grouped into four phases of 10 periods each. Although you will interact only with the same nine others throughout the experiment, your subject number and theirs will be randomly changed at the end of each phase. When the ten periods of Phase 1 end, you and the others will have new subject numbers. The numbers are again randomly shuffled at the beginning of Phase 3 and at the beginning of Phase 4. When Phase 4 ends at the end of period 40, the decision-making portion of the experiment will be over. You will be asked several questions that do not affect your earnings while the experimenters prepare the payment which they will bring to your seat, concluding the experiment.

We will now ask a series of comprehension questions to help you to assess whether you understand the experiment before it begins. Please raise your hand at any time if you have questions. The experiment will not begin until all participants have correctly answered the comprehension questions and until all of the questions of participants have been answered.
Comprehension questions

Please answer the following questions. Raise your hand if you have questions. A member of the experiment team will answer your question. When every participant has answered all questions, we will explain the answers on the white board.

(1) In the Ranking Stage of each period, you will state your preference to be paired with each of five individuals. After every member completes their decision, the computer sums the rankings of each other for all potential pairs. What is the first pair that the computer decides to match?
   (i) A pair whose sum of rank numbers is the lowest [   ]
   (ii) A pair whose sum of rank numbers is the highest [   ]

(2) How many pairings does the computer consider so as to find the first pair in each set (10 subjects) in the Ranking Stage? [    ]

(3) Suppose that you have reached an allocation stage.
   (a) You and your counterpart both allocate 0 points to the joint account. What are your earnings? [    ]
   (b) You and your counterpart both allocate 10 points to the joint account. What are your earnings? [    ]
   (c) You allocate 0 points and your counterpart allocates 5 points to the joint account.
      (c1) What are your earnings? [    ]
      (c2) What are your counterpart’s earnings? [    ]

(4) Are the 5 group members whom you are to rank and one of whom will become your counterpart for the period the same from one period to the next? [    ]

(5) How many participants, yourself included, are in the set of participants from whom your five potential counterparts in a given period are drawn? [    ]

(6) Is player (subject) identification number fixed or changing in a phase of ten periods? [    ]

(7) What about during the experiment as a whole (40 periods)? [    ]
Table: Your and Your Counterpart’s Allocations and Earnings

<table>
<thead>
<tr>
<th>Your allocation decision</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tr>
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</tr>
<tr>
<td>2</td>
<td>11.3</td>
<td>10.95</td>
<td>10.6</td>
<td>10.25</td>
<td>9.9</td>
<td>9.55</td>
<td>9.2</td>
<td>8.85</td>
<td>8.50</td>
<td>8.15</td>
<td>7.8</td>
</tr>
<tr>
<td>3</td>
<td>11.95</td>
<td>11.6</td>
<td>11.25</td>
<td>10.9</td>
<td>10.55</td>
<td>10.2</td>
<td>9.85</td>
<td>9.5</td>
<td>9.15</td>
<td>8.8</td>
<td>8.45</td>
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<td>4</td>
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<td>12.25</td>
<td>11.9</td>
<td>11.55</td>
<td>11.2</td>
<td>10.85</td>
<td>10.5</td>
<td>10.15</td>
<td>9.8</td>
<td>9.45</td>
<td>9.1</td>
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<tr>
<td>5</td>
<td>13.25</td>
<td>12.9</td>
<td>12.55</td>
<td>12.2</td>
<td>11.85</td>
<td>11.5</td>
<td>11.15</td>
<td>10.8</td>
<td>10.45</td>
<td>10.1</td>
<td>9.75</td>
</tr>
<tr>
<td>6</td>
<td>13.9</td>
<td>13.55</td>
<td>13.2</td>
<td>12.85</td>
<td>12.5</td>
<td>12.15</td>
<td>11.8</td>
<td>11.45</td>
<td>11.1</td>
<td>10.75</td>
<td>10.4</td>
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<tr>
<td>7</td>
<td>14.55</td>
<td>14.2</td>
<td>13.85</td>
<td>13.5</td>
<td>13.15</td>
<td>12.8</td>
<td>12.45</td>
<td>12.1</td>
<td>11.75</td>
<td>11.4</td>
<td>11.05</td>
</tr>
<tr>
<td>8</td>
<td>15.2</td>
<td>14.85</td>
<td>14.5</td>
<td>14.15</td>
<td>13.8</td>
<td>13.45</td>
<td>13.1</td>
<td>12.75</td>
<td>12.4</td>
<td>12.05</td>
<td>11.7</td>
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<tr>
<td>9</td>
<td>15.85</td>
<td>15.5</td>
<td>15.15</td>
<td>14.8</td>
<td>14.45</td>
<td>14.1</td>
<td>13.75</td>
<td>13.4</td>
<td>13.05</td>
<td>12.7</td>
<td>12.35</td>
</tr>
<tr>
<td>10</td>
<td>16.5</td>
<td>16.15</td>
<td>15.8</td>
<td>15.45</td>
<td>15.1</td>
<td>14.75</td>
<td>14.4</td>
<td>14.05</td>
<td>13.7</td>
<td>13.35</td>
<td>13.0</td>
</tr>
</tbody>
</table>

Note: Numbers on the lower line of each cell are your earnings. Numbers on the upper line and in italic are your counterpart’s earnings.
2. The 50% 1.3 Treatment

Instructions:
You are now participating in a decision-making experiment in which you will earn an amount of money that depends on your decisions and on the decisions of other participants. During the experiment your earnings will be calculated in points. At the end of the experiment, points will be converted to U.S. dollars at the following rate:

\[
22.22 \text{ points} = \$1
\]

(This means each point will exchange for 4.5 cents of real money)

At the end of the experiment your total earnings will be paid out to you in cash, in addition to the $5 guaranteed for your participation.

The experiment has four phases each consisting of ten periods (in total, 40 periods). Each phase is identical.

During the experiment, you will engage in a series of interactions, each of which will involve you and one other participant. Those with whom you will interact will come from a set of 10 participants, with each individual being randomly assigned to one such set. In each phase, each member of each set of 10 participants, yourself included, will be identified as Player 1, Player 2, Player 3, …, Player 10. These identification numbers are fixed for the ten periods within each phase, but when a phase ends, the numbers are randomly changed before the next phase begins. This means that the individual identified as, say, Player 7 in Phase 2 is unlikely to be the same individual as the one called Player 7 in Phase 1, although within a given phase the identifier “Player 7” always refers to the same participant.

You will make the same kinds of decisions every period, and the structure of each period is identical. Each period consists of three stages, and the following instructions explain the details of any randomly chosen period, say period \( t \), in a phase.

(a) The Ranking Stage

At the onset of period \( t \), the 10 participants in your set will be randomly divided into two groups of 5. Your first task is to give ranking numbers to each of the 5 members of the other group, about whom some information will be shown. Your ranking number for an individual indicates your preference to be paired with that individual during the period’s interaction. A rank of 1 indicates your most preferred possible partner, 5 the least preferred. You must use all five
potential ranks (1, 2, 3, 4, 5), giving one to each member in the group of 5 about whom you are shown information.

Once everyone has submitted their rankings, the computer will assign partners according to the following procedure. First, the computer searches for the pair of participants (always one from each of the randomly formed groups of 5) the sum of whose rankings of one another are the lowest. For example, if Player 2 gave Player 7 her rank number 1 and Player 7 also gave Player 2 his rank number 1, their sum of rank numbers is 2, which is the lowest sum possible, so unless there is a tie with some other pair of participants, Player 2 and Player 7 will be assigned to interact together in this period. Note that in this matching process, since there are 5 participants on each side, the computer calculates the sums of rankings of one another for all 25 possible combinations in order to find the first pair. Ties will be randomly broken by the computer. Once the first pair is found, the computer repeats the procedure for the remaining four participants in each group (in total eight participants in each set), and so on, until each participant has been paired with a participant in the other group of five. Note that sets of 10 remain the same for the entire experiment, but groups of 5 are randomly formed anew each period, their function being only to facilitate the formation of the pairs that will interact in that period.

**Information at the Ranking Stage: Observing Past Decisions**

The decisions that you will be making in the last stage of each interaction involve the allocation of a set of points between two accounts, referred to as a private account and a joint account. Details on how the allocation decisions that you and your counterpart make affect your earnings will be explained below. For now, we focus on the information with which you’ll be provided during the ranking stage. That information concerns the allocations that each of your five potential counterparts made to their joint accounts during [some of] their previous interactions. At the beginning of the ranking stage, your screen will display each potential partner’s player number and his or her average joint account allocation in selected past periods. Any given period’s interaction has a 50% chance of being selected for inclusion in the displayed average. Whether an interaction is selected is determined randomly at the end of each period, this selection outcome remains fixed for the remainder of the phase, and you are informed of the outcome. Since half of all past interactions are selected for display on average, it follows that before the experiment starts, at the end of, say, eight periods of play, four past interactions will be expected to have been selected for inclusion in the displayed information for each participant. But the randomness of the selection means that some may end up having 3, 2, 1 or even 0 interactions selected for display, others 4, 5, 6, 7 or even 8 interactions. The information
displayed will include not only your prospective counterparts’ average past allocations, averaged over the selected past periods, but also how many past allocations were randomly selected to be included in the average. Since there have been no previous periods at this stage in the first period of each phase, no information about your prospective counterparts will be displayed, apart from their randomly assigned identification (i.e., Player) numbers. For subjects who still have 0 selected interactions in a later period, the number 0 will be shown as the number of selected interactions, and n.a. will appear in place of the past average. When the last (i.e., tenth) period of each phase is over, then, all information will be cleared.

An example of what your computer screen might look like at this stage of a later period appears below:

<table>
<thead>
<tr>
<th>Potential Partner</th>
<th>Avg. Past Allocation to Joint Acci</th>
<th># of Pts Included in Calculation</th>
<th>Please Rank Your Potential Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player 1</td>
<td>5.33</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Player 2</td>
<td>4.50</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Player 3</td>
<td>2.25</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Player 4</td>
<td>4.00</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Player 10</td>
<td>4.00</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Once all participants submit their five ranks, the computer will make the partner assignments and will indicate which of the five potential counterparts has been paired with you for this period. Note that there are a variety of reasons why you may not end up with your first choice of partners, for example, the individual you ranked first may not have ranked you first. However, the process that has been described, in which mutual preference is the main factor determining matching, with ties broken randomly, is the only determinant of who you are assigned to interact with.
An example of the computer screen indicating your partner assignment appears below:

(b) Allocation Stage

Once all participants have seen their assignments and clicked the "<<Continue>>" button, you will move on to the allocation stage. In this stage, you and your counterpart will each be given an endowment of 10 points. Then, you and he or she will simultaneously decide how to use your respective point endowments. There are two possibilities:

1. You can allocate points to a joint account.
2. You can allocate points to a private account.

For simplicity, you will be asked to indicate the number of points you want to allocate to the joint account. Only integers between 0 and 10 are allowed for this purpose. The remaining points will be automatically allocated to your private account. Your earnings depend on the total number of points in the joint account and the number of points in your private account.

Your earnings from your private account are equal to the number of points you allocate to that account.
Your earnings from the joint account depend on the sum of points allocated to the joint account by you and your counterpart. Specifically, the total points placed in the joint account are multiplied by a factor of 1.3 and then divided equally between you and your counterpart, meaning that each of you receives 0.65 times the total points the two of you allocate to that account.

In summary, your earnings can be calculated with the following formula:

\[
10 - (\text{points you allocated to the joint account}) + 0.65 \times (\text{sum of points allocated by you and your counterpart to the joint account})
\]

In the last page of the instructions, there is a table that shows all possible combinations of allocations and earnings. From it, you can tell your and your counterpart’s earnings for each possible set of allocation decisions. Please take some time to study this table carefully before the decision-making portion of the experiment begins so that you will have a clear sense of how your own and your counterpart’s decisions interact to determine your respective earnings. You may wish to keep the table in front of you for your reference when that portion of the experiment is in progress.

At the time you make an allocation decision, the following information appears on the computer screen:

A. Your counterpart’s player number.
B. Your counterpart’s average assignment in selected past periods of this phase.
C. How many periods are used to calculate that average (that is, how many of your counterpart’s past periods were randomly selected for inclusion in his or her average).
(c) Post-Allocation Stage

When all participants have made their allocation decisions, you will see a screen telling you the allocation decision of your counterpart and the number of points you have earned in this period. This screen will also tell you the outcome of the random choice to either select or not select your own decision of this period for inclusion in the average shown to others during future periods of the phase. You are free to take notes and use them in your interaction with other players in later periods.
Now that we’ve explained the ranking of prospective counterparts, counterpart assignment, allocation decisions, and their consequences, for each period, it is useful to review the overall structure of the experiment.

As mentioned at the outset, you will interact with those in the set of ten participants to which you’ve been randomly assigned for a total for 40 periods. Those 40 periods are grouped into four phases of 10 periods each. Although you will interact only with the same nine others throughout the experiment, your subject number and theirs will be randomly changed at the end of each phase. Information about past average allocations is never carried over from one phase to another. So, when the ten periods of Phase 1 end, you and the others will have new subject numbers and will begin with no past average information, and the past average information that begins to be shown in period 12 (the second period of Phase 2) refers only to decisions in period 11, not earlier periods. Past average information in, say, period 15, can refer at most to periods 11 – 14, etc. Similarly, you begin Phase 3 with a new subject number and no carry-over of past average information, and likewise with Phase 4. When Phase 4 ends at the end of period 40, the decision-making portion of the experiment will be over. You will be asked several questions that do not affect your earnings while the experimenters prepare the payment which they will bring to your seat, concluding the experiment.
We will now ask a series of comprehension questions to help you to assess whether you understand the experiment before it begins. Please raise your hand at any time if you have questions. The experiment will not begin until all participants have correctly answered the comprehension questions and until all of the questions of participants have been answered.

**Comprehension questions**

Please answer the following questions. Raise your hand if you have questions. A member of the experiment team will answer your question. When every participant has answered all questions, we will explain the answers on the white board.

(1) In the Ranking Stage of each period, you will state your preference to be paired with each of five individuals. After every member completes their decision, the computer sums the rankings of each other for all potential pairs. What is the first pair that the computer decides to match?
   (i) A pair whose sum of rank numbers is the lowest [ ]
   (ii) A pair whose sum of rank numbers is the highest [ ]

(2) How many pairings does the computer consider so as to find the first pair in each set (10 subjects) in the Ranking Stage? [ ]

(3) Suppose that you have reached an allocation stage.
   (a) You and your counterpart both allocate 0 points to the joint account. What are your earnings? [ ]
   (b) You and your counterpart both allocate 10 points to the joint account. What are your earnings? [ ]
   (c) You allocate 0 points and your counterpart allocates 5 points to the joint account.
      (c1) What are your earnings? [ ]
      (c2) What are your counterpart’s earnings? [ ]

(4) Suppose that you have just completed the allocation stage. What is the likelihood—in percentage terms—that your allocation decision will be selected for inclusion when your selected past average contribution is shown to others in later periods of the phase? [ % ]

(5) Will you be informed of how many periods are used to calculate each potential partner’s past average allocation decision? [ ]

(6) Are the 5 group members whom you are to rank and one of whom will become your counterpart for the period the same from one period to the next? [ ]

(7) How many participants, yourself included, are in the set of participants from whom your five potential counterparts in a given period are drawn?
(8) Is player identification number fixed or changing in a phase of ten periods?

[ ]

(9) How about during the experiment as a whole (40 periods)?

(10) Is information about past average allocations carried over from one phase to another?

[ ]
<table>
<thead>
<tr>
<th>Your allocation decision</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tr>
<td>0</td>
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<td>7.20</td>
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<tr>
<td></td>
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<td>10.3</td>
<td>10.95</td>
<td>11.6</td>
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Note: Numbers on the lower line of each cell are your earnings. Numbers on the upper line and in italic are your counterpart’s earnings.
3. The 100% 1.3 Treatment

Instructions:
You are now participating in a decision-making experiment in which you will earn an amount of money that depends on your decisions and on the decisions of other participants. During the experiment your earnings will be calculated in points. At the end of the experiment, points will be converted to U.S. dollars at the following rate:

\[ 22.22 \text{ points} = \$1 \]

(This means each point will exchange for 4.5 cents of real money)

At the end of the experiment your total earnings will be paid out to you in cash, in addition to the $3 guaranteed for your participation.

The experiment has four phases each consisting of ten periods (in total, 40 periods). Each phase is identical.

During the experiment, you will engage in a series of interactions, each of which will involve you and one other participant. Those with whom you will interact will come from a set of 10 participants, with each individual being randomly assigned to one such set. In each phase, each member of each set of 10 participants, yourself included, will be identified as Player 1, Player 2, Player 3, …, Player 10. These identification numbers are fixed for the ten periods within each phase, but when a phase ends, the numbers are randomly changed before the next phase begins. This means that the individual identified as, say, Player 7 in Phase 2 is unlikely to be the same individual as the one called Player 7 in Phase 1, although within a given phase the identifier “Player 7” always refers to the same participant.

You will make the same kinds of decisions every period, and the structure of each period is identical. Each period consists of three stages, and the following instructions explain the details of any randomly chosen period, say period \( t \), in a phase.

(a) The Ranking Stage

At the onset of period \( t \), the 10 participants in your set will be randomly divided into two groups of 5. Your first task is to give ranking numbers to each of the 5 members of the other group, about whom some information will be shown. Your ranking number for an individual indicates your preference to be paired with that individual during the period’s interaction. A rank of 1
indicates your most preferred possible partner, 5 the least preferred. You must use all five potential ranks (1, 2, 3, 4, 5), giving one to each member in the group of 5 about whom you are shown information.

Once everyone has submitted their rankings, the computer will assign partners according to the following procedure. First, the computer searches for the pair of participants (always one from each of the randomly formed groups of 5) the sum of whose rankings of one another are the lowest. For example, if Player 2 gave Player 7 her rank number 1 and Player 7 also gave Player 2 his rank number 1, their sum of rank numbers is 2, which is the lowest sum possible, so unless there is a tie with some other pair of participants, Player 2 and Player 7 will be assigned to interact together in this period. Note that in this matching process, since there are 5 participants on each side, the computer calculates the sums of rankings of one another for all 25 possible combinations in order to find the first pair. Ties will be randomly broken by the computer. Once the first pair is found, the computer repeats the procedure for the remaining four participants in each group (in total eight participants in each set), and so on, until each participant has been paired with a participant in the other group of five. Note that sets of 10 remain the same for the entire experiment, but groups of 5 are randomly formed anew each period, their function being only to facilitate the formation of the pairs that will interact in that period.

**Information at the Ranking Stage: Observing Past Decisions**

The decisions that you will be making in the last stage of each interaction involve the allocation of a set of points between two accounts, referred to as a private account and a joint account. Details on how the allocation decisions that you and your counterpart make affect your earnings will be explained below. For now, we focus on the information with which you’ll be provided during the ranking stage. That information concerns the allocations that each of your five potential counterparts made to their joint accounts during their previous interactions of the current ten period phase. At the beginning of the ranking stage, your screen will display each potential partner’s player number and his or her average joint account allocation in all past periods of the current phase. Since there have been no previous periods at this stage in the first period of a phase, no information about your prospective counterparts will be displayed, apart from their randomly assigned identification (i.e., Player) numbers.
An example of computer screen for a later period appears below:

Once all participants submit their five ranks, the computer will make the partner assignments and will indicate which of the five potential counterparts has been paired with you for this period. Note that there are a variety of reasons why you may not end up with your first choice of partners, for example, the individual you ranked first may not have ranked you first. However, the process that has been described, in which mutual preference is the main factor determining matching, with ties broken randomly, is the only determinant of who you are assigned to interact with.
An example of the computer screen indicating your partner assignment appears below:

(b) Allocation Stage

Once all participants have seen their assignments and clicked the <<Continue>> button, you will move on to the allocation stage. In this stage, you and your counterpart, will each be given an endowment of 10 points. Then, you and he or she will simultaneously decide how to use your respective point endowments. There are two possibilities:

1. You can allocate points to a joint account.
2. You can allocate points to a private account.

For simplicity, you will be asked to indicate the number of points you want to allocate to the joint account. Only integers between 0 and 10 are allowed for this purpose. The remaining points will be automatically allocated to your private account. Your earnings depend on the total number of points in the joint account and the number of points in your private account. Your earnings from your private account are equal to the number of points you allocate to that account.
Your earnings from the joint account depend on the sum of points allocated to the joint account by you and your counterpart. Specifically, the total points placed in the joint account are multiplied by a factor of 1.3 and then divided equally between you and your counterpart, meaning that each of you receives 0.65 times the total points the two of you allocate to that account.

In summary, your earnings can be calculated with the following formula:

\[ 10 - \text{(points you allocated to the joint account)} + 0.65 \times \text{(sum of points allocated by you and your counterpart to the joint account)} \]

In the last page of the instructions, there is a table that shows all possible combinations of allocations and earnings. From it, you can tell your and your counterpart’s earnings for each possible set of allocation decisions. Please take some time to study this table carefully before the decision-making portion of the experiment begins so that you will have a clear sense of how your own and your counterpart’s decisions interact to determine your respective earnings. You may wish to keep the table in front of you for your reference when that portion of the experiment is in progress.

At the time that you make an allocation decision, the following information appears on the computer screen:

A. Your counterpart’s player number.
B. Your counterpart’s average assignment in all past periods of this phase.
An example of the computer screen:

(c) Post-Allocation Stage

When all participants have made their allocation decisions, you will see a screen telling you the allocation decision of your counterpart and the number of points you have earned in this period.
Now that we’ve explained the ranking of prospective counterparts, counterpart assignment, allocation decisions, and their consequences, for each period, it is useful to review the overall structure of the experiment.

As mentioned at the outset, you will interact with those in the set of ten participants to which you’ve been randomly assigned for a total of 40 periods. Those 40 periods are grouped into four phases of 10 periods each. Although you will interact only with the same nine others throughout the experiment, your subject number and theirs will be randomly changed at the end of each phase. Information about past average allocations is never carried over from one phase to another. So, when the ten periods of Phase 1 end, you and the others will have new subject numbers and will begin with no past average information, and the past average information that begins to be shown in period 12 (the second period of Phase 2) refers only to decisions in period 11, not earlier periods. Past average information in, say, period 15, refers only to periods 11–14, etc. Similarly, you begin Phase 3 with a new subject number and no carry-over of past average information, and likewise with Phase 4. When Phase 4 ends at the end of period 40, the decision-making portion of the experiment will be over. You will be asked several questions that
do not affect your earnings while the experimenters prepare the payment which they will bring to your seat, concluding the experiment.

We will now ask a series of comprehension questions to help you to assess whether you understand the experiment before it begins. Please raise your hand at any time if you have questions. The experiment will not begin until all participants have correctly answered the comprehension questions and until all of the questions of participants have been answered.

**Comprehension questions**

Please answer the following questions. Raise your hand if you have questions. A member of the experiment team will answer your question. When every participant has answered all questions, we will explain the answers on the white board.

(1) In the Ranking Stage of each period, you will state your preference to be paired with each of five individuals. After every member completes their decision, the computer sums the rankings of each other for all potential pairs. What is the first pair that the computer decides to match?
   (i) A pair whose sum of rank numbers is the lowest [    ]
   (ii) A pair whose sum of rank numbers is the highest [    ]

(2) How many pairings does the computer consider so as to find the first pair in each set (10 subjects) in the Ranking Stage? [   ]

(3) Suppose that you have reached an allocation stage.
   (a) You and your counterpart both allocate 0 points to the joint account. What are your earnings? [   ]
   (b) You and your counterpart both allocate 10 points to the joint account. What are your earnings? [   ]
   (c) You allocate 0 points and your counterpart allocates 5 points to the joint account.
      (c1) What are your earnings? [   ]
      (c2) What are your counterpart’s earnings? [   ]

(4) Are the 5 group members whom you are to rank and one of whom will become your counterpart for the period the same from one period to the next? [    ]

(5) How many participants, yourself included, are in the set of participants from whom your five potential counterparts in a given period are drawn?

(6) Is player identification number fixed or changing in a phase of ten periods? [    ]
(7) How about during the experiment as a whole (40 periods)?

(8) Is information about past average allocations carried over from one phase to another? [ ]
### Table: Your and Your Counterpart’s Allocations and Earnings

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<td>11.7</td>
<td>12.35</td>
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</tbody>
</table>

Note: Numbers on the lower line of each cell are your earnings. Numbers on the upper line and in italic are your counterpart’s earnings.
4. The 0% 1.7 Treatment

Instructions:
You are now participating in a decision-making experiment in which you will earn an amount of money that depends on your decisions and on the decisions of other participants. During the experiment your earnings will be calculated in points. At the end of the experiment, points will be converted to U.S. dollars at the following rate:

22.22 points = $1
(This means each point will exchange for 4.5 cents of real money)

At the end of the experiment your total earnings will be paid out to you in cash, in addition to the $5 guaranteed for your participation.

During the experiment, communication between participants is not permitted in any form. Please turn off your cell phone and similar devices, and do not use the computer except as required by the experiment.

The experiment has four phases each consisting of ten periods (in total, 40 periods). Each phase is identical.

During the experiment, you will engage in a series of interactions, each of which will involve you and one other participant. Those with whom you will interact will come from a set of 10 participants, with each individual being randomly assigned to one such set. In each phase, each member of each set of 10 participants, yourself included, will be identified as Player 1, Player 2, Player 3, …, Player 10. These identification numbers are fixed for the ten periods within each phase, but when a phase ends, the numbers are randomly changed before the next phase begins. This means that the individual identified as, say, Player 7 in Phase 2 is unlikely to be the same individual as the one called Player 7 in Phase 1, although within a given phase the identifier “Player 7” always refers to the same participant.

You will make the same kinds of decisions every period. Each period consists of three stages, and the following instructions explain the details of any randomly chosen period, say period \( t \), in a phase.
(a) The Ranking Stage

At the onset of period $t$, the 10 participants in your set will be randomly divided into two groups of 5. Your first task is to give ranking numbers to each of the 5 members of the other group, about whom some information will be shown. Your ranking number for an individual indicates your preference to be paired with that individual during the period’s interaction. A rank of 1 indicates your most preferred possible partner, 5 the least preferred. You must use all five potential ranks (1, 2, 3, 4, 5), giving one to each member in the group of 5 about whom you are shown information.

Once everyone has submitted their rankings, the computer will assign partners according to the following procedure. First, the computer searches for the pair of participants (always one from each of the randomly formed groups of 5) the sum of whose rankings of one another are the lowest. For example, if Player 2 gave Player 7 her rank number 1 and Player 7 also gave Player 2 his rank number 1, their sum of rank numbers is 2, which is the lowest sum possible, so unless there is a tie with some other pair of participants, Player 2 and Player 7 will be assigned to interact together in this period. Note that in this matching process, since there are 5 participants on each side, the computer calculates the sums of rankings of one another for all 25 possible combinations in order to find the first pair. Ties will be randomly broken by the computer. Once the first pair is found, the computer repeats the procedure for the remaining four participants in each group (in total eight participants in each set), and so on, until each participant has been paired with a participant in the other group of five. Note that sets of 10 remain the same for the entire experiment, but groups of 5 are randomly formed anew each period, their function being only to facilitate the formation of the pairs that will interact in that period.

Information at the Ranking Stage

The decisions that you will be making in the last stage of each interaction involve the allocation of a set of points between two accounts, referred to as a private account and a joint account. Details on how the allocation decisions that you and your counterpart make affect your earnings will be explained below. For now, we focus on the fact that during the ranking stage, your screen will display each potential partner’s player number. If you recall the choice or choices made by a given individual during past interactions with you in the current phase, you may use that information to help you to decide what rankings to give. (You are free to write notes on the instruction sheets or scrap paper, to help with recall.) Remember, however, that the Player numbers change randomly from one phase to the next, so an interaction you had with, say, Player
5 during Phase 1 conveys no information whatsoever about the individual referred to as Player 5 in Phase 2. Also keep in mind that you will begin each phase with no information about any specific member of your set (although the same nine others are always in the set); you are nevertheless required to assign rankings.

An example of the computer screen appears below:

Once all participants submit their five ranks, the computer will make the partner assignments and will indicate which of the five potential counterparts has been paired with you for this period. Note that there are a variety of reasons why you may not end up with your first choice of partners, for example, the individual you ranked first may not have ranked you first. However, the process that has been described, in which mutual preference is the main factor determining matching, with ties broken randomly, is the only determinant of who you are assigned to interact with.
An example of the computer screen appears below:

(b) Allocation Stage

Once all participants have seen their assignments and clicked the <<Continue>> button, you will move on to the allocation stage. In this stage, you and your counterpart will each be given an endowment of 10 points. Then, you and he or she will simultaneously decide how to use your respective point endowments. There are two possibilities:

1. You can allocate points to a joint account.
2. You can allocate points to a private account.

For simplicity, you will be asked to indicate the number of points you want to allocate to the joint account. Only integers between 0 and 10 are allowed for this purpose. The remaining points will be automatically allocated to your private account. Your earnings depend on the total number of points in the joint account, and the number of points in your private account.

Your earnings from your private account are equal to the number of points you allocate to that account.
Your earnings from the joint account depend on the **sum** of points allocated to the joint account by you and your counterpart. Specifically, the total points placed in the joint account are multiplied by a factor of **1.7** and then divided equally between you and your counterpart, meaning that each of you receives **0.85** times the total points the two of you allocate to that account.

In summary, your earnings can be calculated with the following formula:

$$10 - (\text{points you allocated to the joint account}) + 0.85 \times (\text{sum of points allocated by you and your counterpart to the joint account})$$

In the last page of the instructions, there is a table that shows all possible combinations of allocations and earnings. From it, you can tell your and your counterpart’s earnings for each possible set of allocation decisions. Please take some time to study this table carefully before the decision-making portion of the experiment begins so that you will have a clear sense of how your own and your counterpart’s decisions interact to determine your respective earnings. You may wish to keep the table in front of you for your reference when that portion of the experiment is in progress.

At the time you make an allocation decision, your counterpart’s player number appears on the computer screen.
An example of the computer screen:

(c) Post-Allocation Stage

When all participants have made their allocation decisions, you will see a screen telling you the allocation decision of your counterpart and the number of points you have earned in this period.
An example of the computer screen:

Now that we’ve explained the ranking of prospective counterparts, counterpart assignment, allocation decisions, and their consequences, for each period, it is useful to review the overall structure of the experiment.

As mentioned at the outset, you will interact with those in the set of ten participants to which you’ve been randomly assigned for a total for 40 periods. Those 40 periods are grouped into four phases of 10 periods each. Although you will interact only with the same nine others throughout the experiment, your subject number and theirs will be randomly changed at the end of each phase. When the ten periods of Phase 1 end, you and the others will have new subject numbers. The numbers are again randomly shuffled at the beginning of Phase 3 and at the beginning of Phase 4. When Phase 4 ends at the end of period 40, the decision-making portion of the experiment will be over. You will be asked several questions that do not affect your earnings while the experimenters prepare the payment which they will bring to your seat, concluding the experiment.

We will now ask a series of comprehension questions to help you to assess whether you understand the experiment before it begins. Please raise your hand at any time if you have
questions. The experiment will not begin until all participants have correctly answered the comprehension questions and until all of the questions of participants have been answered.

**Comprehension questions**

Please answer the following questions. Raise your hand if you have questions. A member of the experiment team will answer your question. When every participant has answered all questions, we will explain the answers on the white board.

(1) In the Ranking Stage of each period, you will state your preference to be paired with each of five individuals. After every member completes their decision, the computer sums the rankings of each other for all potential pairs. What is the first pair that the computer decides to match?

   (i) A pair whose sum of rank numbers is the lowest [ ]

   (ii) A pair whose sum of rank numbers is the highest [ ]

(2) How many pairings does the computer consider so as to find the first pair in each set (10 subjects) in the Ranking Stage? [ ]

(3) Suppose that you have reached an allocation stage.

   (a) You and your counterpart both allocate 0 points to the joint account. What are your earnings? [ ]

   (b) You and your counterpart both allocate 10 points to the joint account. What are your earnings? [ ]

   (c) You allocate 0 points and your counterpart allocates 5 points to the joint account.

      (c1) What are your earnings? [ ]

      (c2) What are your counterpart’s earnings? [ ]

(4) Are the 5 group members whom you are to rank and one of whom will become your counterpart for the period the same from one period to the next? [ ]

(5) How many participants, yourself included, are in the set of participants from whom your five potential counterparts in a given period are drawn? [ ]
(6) Is player (subject) identification number fixed or changing in a phase of ten periods? 

[ ]

(7) What about during the experiment as a whole (40 periods)? 

[ ]
### Table: Your and Your Counterpart’s Allocations and Earnings

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<td>17.00</td>
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</table>

Note: Numbers on the lower line of each cell are your earnings. Numbers on the upper line and in italic are your counterpart’s earnings.
5. The 50% 1.7 Treatment

Instructions:
You are now participating in a decision-making experiment in which you will earn an amount of money that depends on your decisions and on the decisions of other participants. During the experiment your earnings will be calculated in points. At the end of the experiment, points will be converted to U.S. dollars at the following rate:

\[ \text{22.22 points} = \$1 \]

(This means each point will exchange for 4.5 cents of real money)

At the end of the experiment your total earnings will be paid out to you in cash, in addition to the $5 guaranteed for your participation.

During the experiment, communication between participants is not permitted in any form. Please turn off your cell phone and similar devices, and do not use the computer except as required by the experiment.

The experiment has four phases each consisting of ten periods (in total, 40 periods). Each phase is identical.

During the experiment, you will engage in a series of interactions, each of which will involve you and one other participant. Those with whom you will interact will come from a set of 10 participants, with each individual being randomly assigned to one such set. In each phase, each member of each set of 10 participants, yourself included, will be identified as Player 1, Player 2, Player 3, …, Player 10. These identification numbers are fixed for the ten periods within each phase, but when a phase ends, the numbers are randomly changed before the next phase begins. This means that the individual identified as, say, Player 7 in Phase 2 is unlikely to be the same individual as the one called Player 7 in Phase 1, although within a given phase the identifier “Player 7” always refers to the same participant.

You will make the same kinds of decisions every period, and the structure of each period is identical. Each period consists of three stages, and the following instructions explain the details of any randomly chosen period, say period $t$, in a phase.
(a) The Ranking Stage

At the onset of period $t$, the 10 participants in your set will be randomly divided into two groups of 5. Your first task is to give ranking numbers to each of the 5 members of the other group, about whom some information will be shown. Your ranking number for an individual indicates your preference to be paired with that individual during the period’s interaction. A rank of 1 indicates your most preferred possible partner, 5 the least preferred. You must use all five potential ranks (1, 2, 3, 4, 5), giving one to each member in the group of 5 about whom you are shown information.

Once everyone has submitted their rankings, the computer will assign partners according to the following procedure. First, the computer searches for the pair of participants (always one from each of the randomly formed groups of 5) the sum of whose rankings of one another are the lowest. For example, if Player 2 gave Player 7 her rank number 1 and Player 7 also gave Player 2 his rank number 1, their sum of rank numbers is 2, which is the lowest sum possible, so unless there is a tie with some other pair of participants, Player 2 and Player 7 will be assigned to interact together in this period. Note that in this matching process, since there are 5 participants on each side, the computer calculates the sums of rankings of one another for all 25 possible combinations in order to find the first pair. Ties will be randomly broken by the computer. Once the first pair is found, the computer repeats the procedure for the remaining four participants in each group (in total eight participants in each set), and so on, until each participant has been paired with a participant in the other group of five. Note that sets of 10 remain the same for the entire experiment, but groups of 5 are randomly formed anew each period, their function being only to facilitate the formation of the pairs that will interact in that period.

Information at the Ranking Stage: Observing Past Decisions

The decisions that you will be making in the last stage of each interaction involve the allocation of a set of points between two accounts, referred to as a private account and a joint account. Details on how the allocation decisions that you and your counterpart make affect your earnings will be explained below. For now, we focus on the information with which you’ll be provided during the ranking stage. That information concerns the allocations that each of your five potential counterparts made to their joint accounts during [some of] their previous interactions. At the beginning of the ranking stage, your screen will display each potential partner’s player number and his or her average joint account allocation in selected past periods. Any given
period’s interaction has a 50% chance of being selected for inclusion in the displayed average. Whether an interaction is selected is determined randomly at the end of each period, this selection outcome remains fixed for the remainder of the phase, and you are informed of the outcome. Since half of all past interactions are selected for display on average, it follows that before the experiment starts, at the end of, say, eight periods of play, four past interactions will be expected to have been selected for inclusion in the displayed information for each participant. But the randomness of the selection means that some may end up having 3, 2, 1 or even 0 interactions selected for display, others 4, 5, 6, 7 or even 8 interactions. The information displayed will include not only your prospective counterparts’ average past allocations, averaged over the selected past periods, but also how many past allocations were randomly selected to be included in the average. Since there have been no previous periods at this stage in the first period of each phase, no information about your prospective counterparts will be displayed, apart from their randomly assigned identification (i.e., Player) numbers. For subjects who still have 0 selected interactions in a later period, the number 0 will be shown as the number of selected interactions, and n.a. will appear in place of the past average. When the last (i.e., tenth) period of each phase is over, then, all information will be cleared.

An example of what your computer screen might look like at this stage of a later period appears below:
Once all participants submit their five ranks, the computer will make the partner assignments and will indicate which of the five potential counterparts has been paired with you for this period. Note that there are a variety of reasons why you may not end up with your first choice of partners, for example, the individual you ranked first may not have ranked you first. However, the process that has been described, in which mutual preference is the main factor determining matching, with ties broken randomly, is the only determinant of who you are assigned to interact with.

An example of the computer screen indicating your partner assignment appears below:
(b) Allocation Stage

Once all participants have seen their assignments and clicked the <<Continue>> button, you will move on to the allocation stage. In this stage, you and your counterpart will each be given an endowment of 10 points. Then, you and he or she will simultaneously decide how to use your respective point endowments. There are two possibilities:

1. **You can allocate points to a joint account.**
2. **You can allocate points to a private account.**

For simplicity, you will be asked to indicate the number of points you want to allocate to the joint account. Only integers between 0 and 10 are allowed for this purpose. The remaining points will be automatically allocated to your private account. Your earnings depend on the total number of points in the joint account and the number of points in your private account.

Your earnings from your private account are equal to the number of points you allocate to that account.
Your earnings from the joint account depend on the sum of points allocated to the joint account by you and your counterpart. Specifically, the total points placed in the joint account are multiplied by a factor of 1.7 and then divided equally between you and your counterpart, meaning that each of you receives 0.85 times the total points the two of you allocate to that account.

In summary, your earnings can be calculated with the following formula:

$$10 - \text{(points you allocated to the joint account)} + 0.85 \times \text{(sum of points allocated by you and your counterpart to the joint account)}$$

In the last page of the instructions, there is a table that shows all possible combinations of allocations and earnings. From it, you can tell your and your counterpart’s earnings for each possible set of allocation decisions. Please take some time to study this table carefully before the decision-making portion of the experiment begins so that you will have a clear sense of how your own and your counterpart’s decisions interact to determine your respective earnings. You may wish to keep the table in front of you for your reference when that portion of the experiment is in progress.

At the time you make an allocation decision, the following information appears on the computer screen:

A. Your counterpart’s player number.
B. Your counterpart’s average assignment in selected past periods of this phase.
C. How many periods are used to calculate that average (that is, how many of your counterpart’s past periods were randomly selected for inclusion in his or her average).
An example of the computer screen:

(c) Post-Allocation Stage

When all participants have made their allocation decisions, you will see a screen telling you the allocation decision of your counterpart and the number of points you have earned in this period. This screen will also tell you the outcome of the random choice to either select or not select your own decision of this period for inclusion in the average shown to others during future periods of the phase. You are free to take notes and use them in your interaction with other players in later periods.
Now that we’ve explained the ranking of prospective counterparts, counterpart assignment, allocation decisions, and their consequences, for each period, it is useful to review the overall structure of the experiment.

As mentioned at the outset, you will interact with those in the set of ten participants to which you’ve been randomly assigned for a total for 40 periods. Those 40 periods are grouped into four phases of 10 periods each. Although you will interact only with the same nine others throughout the experiment, your subject number and theirs will be randomly changed at the end of each phase. Information about past average allocations is never carried over from one phase to another. So, when the ten periods of Phase 1 end, you and the others will have new subject numbers and will begin with no past average information, and the past average information that begins to be shown in period 12 (the second period of Phase 2) refers only to decisions in period 11, not earlier periods. Past average information in, say, period 15, can refer at most to periods 11 – 14, etc. Similarly, you begin Phase 3 with a new subject number and no carry-over of past average information, and likewise with Phase 4. When Phase 4 ends at the end of period 40, the decision-making portion of the experiment will be over. You will be asked several questions that
do not affect your earnings while the experimenters prepare the payment which they will bring to your seat, concluding the experiment.

We will now ask a series of comprehension questions to help you to assess whether you understand the experiment before it begins. Please raise your hand at any time if you have questions. The experiment will not begin until all participants have correctly answered the comprehension questions and until all of the questions of participants have been answered.

**Comprehension questions**

Please answer the following questions. Raise your hand if you have questions. A member of the experiment team will answer your question. When every participant has answered all questions, we will explain the answers on the white board.

(1) In the Ranking Stage of each period, you will state your preference to be paired with each of five individuals. After every member completes their decision, the computer sums the rankings of each other for all potential pairs. What is the first pair that the computer decides to match?

   (i) A pair whose sum of rank numbers is the lowest [   ]

   (ii) A pair whose sum of rank numbers is the highest [   ]

(2) How many pairings does the computer consider so as to find the first pair in each set (10 subjects) in the Ranking Stage? [   ]

(3) Suppose that you have reached an allocation stage.

   (a) You and your counterpart both allocate 0 points to the joint account. What are your earnings? [   ]

   (b) You and your counterpart both allocate 10 points to the joint account. What are your earnings? [   ]

   (c) You allocate 0 points and your counterpart allocates 5 points to the joint account.

      (c1) What are your earnings? [   ]

      (c2) What are your counterpart’s earnings? [   ]
(4) Suppose that you have just completed the allocation stage. What is the likelihood—in percentage terms—that your allocation decision will be selected for inclusion when your selected past average contribution is shown to others in later periods of the phase? [ % ]

(5) Will you be informed of how many periods are used to calculate each potential partner’s past average allocation decision? [ ]

(6) Are the 5 group members whom you are to rank and one of whom will become your counterpart for the period the same from one period to the next? [ ]

(7) How many participants, yourself included, are in the set of participants from whom your five potential counterparts in a given period are drawn?

(8) Is player identification number fixed or changing in a phase of ten periods?

[ ]

(9) How about during the experiment as a whole (40 periods)?

(10) Is information about past average allocations carried over from one phase to another?

[ ]
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Note: Numbers on the lower line of each cell are your earnings. Numbers on the upper line and in italic are your counterpart’s earnings.
6. The 100% 1.7 Treatment

Instructions:

You are now participating in a decision-making experiment in which you will earn an amount of money that depends on your decisions and on the decisions of other participants. During the experiment your earnings will be calculated in points. At the end of the experiment, points will be converted to U.S. dollars at the following rate:

\[ 22.22 \text{ points} = \$1 \]

(This means each point will exchange for 4.5 cents of real money)

At the end of the experiment your total earnings will be paid out to you in cash, in addition to the $5 guaranteed for your participation.

During the experiment, communication between participants is not permitted in any form. Please turn off your cell phone and similar devices, and do not use the computer except as required by the experiment.

The experiment has four phases each consisting of ten periods (in total, 40 periods). Each phase is identical.

During the experiment, you will engage in a series of interactions, each of which will involve you and one other participant. Those with whom you will interact will come from a set of 10 participants, with each individual being randomly assigned to one such set. In each phase, each member of each set of 10 participants, yourself included, will be identified as Player 1, Player 2, Player 3, …, Player 10. These identification numbers are fixed for the ten periods within each phase, but when a phase ends, the numbers are randomly changed before the next phase begins. This means that the individual identified as, say, Player 7 in Phase 2 is unlikely to be the same individual as the one called Player 7 in Phase 1, although within a given phase the identifier “Player 7” always refers to the same participant.

You will make the same kinds of decisions every period, and the structure of each period is identical. Each period consists of three stages, and the following instructions explain the details of any randomly chosen period, say period \( t \), in a phase.
(a) The Ranking Stage

At the onset of period \( t \), the 10 participants in your set will be randomly divided into two groups of 5. Your first task is to give ranking numbers to each of the 5 members of the other group, about whom some information will be shown. Your ranking number for an individual indicates your preference to be paired with that individual during the period’s interaction. A rank of 1 indicates your most preferred possible partner, 5 the least preferred. You must use all five potential ranks (1, 2, 3, 4, 5), giving one to each member in the group of 5 about whom you are shown information.

Once everyone has submitted their rankings, the computer will assign partners according to the following procedure. First, the computer searches for the pair of participants (always one from each of the randomly formed groups of 5) the sum of whose rankings of one another are the lowest. For example, if Player 2 gave Player 7 her rank number 1 and Player 7 also gave Player 2 his rank number 1, their sum of rank numbers is 2, which is the lowest sum possible, so unless there is a tie with some other pair of participants, Player 2 and Player 7 will be assigned to interact together in this period. Note that in this matching process, since there are 5 participants on each side, the computer calculates the sums of rankings of one another for all 25 possible combinations in order to find the first pair. Ties will be randomly broken by the computer. Once the first pair is found, the computer repeats the procedure for the remaining four participants in each group (in total eight participants in each set), and so on, until each participant has been paired with a participant in the other group of five. Note that sets of 10 remain the same for the entire experiment, but groups of 5 are randomly formed anew each period, their function being only to facilitate the formation of the pairs that will interact in that period.

Information at the Ranking Stage: Observing Past Decisions

The decisions that you will be making in the last stage of each interaction involve the allocation of a set of points between two accounts, referred to as a private account and a joint account. Details on how the allocation decisions that you and your counterpart make affect your earnings will be explained below. For now, we focus on the information with which you’ll be provided during the ranking stage. That information concerns the allocations that each of your five potential counterparts made to their joint accounts during their previous interactions of the current ten period phase. At the beginning of the ranking stage, your screen will display each potential partner’s player number and his or her average joint account allocation in all past periods of the current phase. Since there have been no previous periods at this stage in the first
period of a phase, no information about your prospective counterparts will be displayed, apart from their randomly assigned identification (i.e., Player) numbers.

An example of computer screen for a later period appears below:

Once all participants submit their five ranks, the computer will make the partner assignments and will indicate which of the five potential counterparts has been paired with you for this period. Note that there are a variety of reasons why you may not end up with your first choice of partners, for example, the individual you ranked first may not have ranked you first. However, the process that has been described, in which mutual preference is the main factor determining matching, with ties broken randomly, is the only determinant of who you are assigned to interact with.
An example of the computer screen indicating your partner assignment appears below:

(b) Allocation Stage

Once all participants have seen their assignments and clicked the <<Continue>> button, you will move on to the allocation stage. In this stage, you and your counterpart, will each be given an endowment of 10 points. Then, you and he or she will simultaneously decide how to use your respective point endowments. There are two possibilities:

1. You can allocate points to a joint account.
2. You can allocate points to a private account.

For simplicity, you will be asked to indicate the number of points you want to allocate to the joint account. Only integers between 0 and 10 are allowed for this purpose. The remaining points will be automatically allocated to your private account. Your earnings depend on the total number of points in the joint account and the number of points in your private account.

Your earnings from your private account are equal to the number of points you allocate to that account.
Your earnings from the joint account depend on the sum of points allocated to the joint account by you and your counterpart. Specifically, the total points placed in the joint account are multiplied by a factor of 1.7 and then divided equally between you and your counterpart, meaning that each of you receives 0.85 times the total points the two of you allocate to that account.

In summary, your earnings can be calculated with the following formula:

$$10 - \text{(points you allocated to the joint account)} + 0.85 \times \text{(sum of points allocated by you and your counterpart to the joint account)}$$

In the last page of the instructions, there is a table that shows all possible combinations of allocations and earnings. From it, you can tell your and your counterpart’s earnings for each possible set of allocation decisions. Please take some time to study this table carefully before the decision-making portion of the experiment begins so that you will have a clear sense of how your own and your counterpart’s decisions interact to determine your respective earnings. You may wish to keep the table in front of you for your reference when that portion of the experiment is in progress.

At the time that you make an allocation decision, the following information appears on the computer screen:

A. Your counterpart’s player number.
B. Your counterpart’s average assignment in all past periods of this phase.
An example of the computer screen:

(c) Post-Allocation Stage

When all participants have made their allocation decisions, you will see a screen telling you the allocation decision of your counterpart and the number of points you have earned in this period.
An example of the computer screen:

Now that we’ve explained the ranking of prospective counterparts, counterpart assignment, allocation decisions, and their consequences, for each period, it is useful to review the overall structure of the experiment.

As mentioned at the outset, you will interact with those in the set of ten participants to which you’ve been randomly assigned for a total of 40 periods. Those 40 periods are grouped into four phases of 10 periods each. Although you will interact only with the same nine others throughout the experiment, your subject number and theirs will be randomly changed at the end of each phase. Information about past average allocations is never carried over from one phase to another. So, when the ten periods of Phase 1 end, you and the others will have new subject numbers and will begin with no past average information, and the past average information that begins to be shown in period 12 (the second period of Phase 2) refers only to decisions in period 11, not earlier periods. Past average information in, say, period 15, refers only to periods 11 – 14, etc. Similarly, you begin Phase 3 with a new subject number and no carry-over of past average information, and likewise with Phase 4. When Phase 4 ends at the end of period 40, the decision-making portion of the experiment will be over. You will be asked several questions that
do not affect your earnings while the experimenters prepare the payment which they will bring to your seat, concluding the experiment.

We will now ask a series of comprehension questions to help you to assess whether you understand the experiment before it begins. Please raise your hand at any time if you have questions. The experiment will not begin until all participants have correctly answered the comprehension questions and until all of the questions of participants have been answered.

**Comprehension questions**

Please answer the following questions. Raise your hand if you have questions. A member of the experiment team will answer your question. When every participant has answered all questions, we will explain the answers on the white board.

(1) In the Ranking Stage of each period, you will state your preference to be paired with each of five individuals. After every member completes their decision, the computer sums the rankings of each other for all potential pairs. What is the first pair that the computer decides to match?
   
   (i) A pair whose sum of rank numbers is the lowest
   
   (ii) A pair whose sum of rank numbers is the highest

(2) How many pairings does the computer consider so as to find the first pair in each set (10 subjects) in the Ranking Stage?

(3) Suppose that you have reached an allocation stage.

(a) You and your counterpart both allocate 0 points to the joint account. What are your earnings?

(b) You and your counterpart both allocate 10 points to the joint account. What are your earnings?

(c) You allocate 0 points and your counterpart allocates 5 points to the joint account.

   (c1) What are your earnings?

   (c2) What are your counterpart’s earnings?

(4) Are the 5 group members whom you are to rank and one of whom will become your counterpart for the period the same from one period to the next?
(5) How many participants, yourself included, are in the set of participants from whom your five potential counterparts in a given period are drawn?

(6) Is player identification number fixed or changing in a phase of ten periods?

[                    ]

(7) How about during the experiment as a whole (40 periods)?

(8) Is information about past average allocations carried over from one phase to another?

[                    ]
Table: Your and Your Counterpart’s Allocations and Earnings

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<th>Your counterpart’s allocation decision</th>
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