

Supplemental Material to Group Identity and Social Preferences

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This material includes experimental instructions, and a post-experiment survey and the summary statistics. A CES model of social preference incorporating both distribution and reciprocal preferences, which extends the model of James C. Cox, Daniel Friedman and Steven Gjerstad (2007), is estimated and discussed in Yan Chen and Sherry Xin Li (2008).

1 Experimental Instructions

This is the experimenter's copy of instructions. Materials inside the square brackets are not displayed on the subject instructions. Beginning at Part 2, the participant has a banner displaying the group she belongs to at the top of every screen, which is not displayed here. In Part 3, we present the instructions on the sequential games using two games as examples. Instructions for other treatment sessions are identical except that the set of games are different as presented in Appendix A. Instructions for the control sessions are identical to Part 3 of the experiment except that the choices are not conditional on the group composition.

[New Screen]

This is an experiment in decision-making. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. Your earnings are given in tokens. This experiment has 3 parts and 16 participants. Your total earnings will be the sum of your payoffs in each part. At the end of the experiment you will be paid IN CASH based on the exchange rate

\$1 = 100 tokens.

In addition, you will be paid \$5 for participation. Everyone will be paid in private and you are under no obligation to tell others how much you earn.

Please do not communicate with each other during the experiment. If you have a question, feel free to raise your hand, and an experimenter will come to help you.

[New Screen]

In Part 1 everyone will be shown 5 pairs of paintings by two artists. You will be asked to choose which painting in each pair you prefer. You will then be classified into one of two groups, based on which artist you prefer. Then you will be asked to answer questions on two other paintings. Each correct answer will bring you additional tokens. You may get help from or help other members in your own group while answering the questions.

The participants you are grouped with will be the same for the rest of the experiment.

After Part 1 has finished, we will give you instructions for the next part of the experiment.

[Waiting Screen]

[New Screen]

Now please choose which painting you prefer by clicking on either A or B from each pair.

After everyone submits answers, you will be privately informed of which group you are in.

Pair #1	1A (radio button)	1B (radio button)
Pair #2	2A (radio button)	2B (radio button)
Pair #3	3A (radio button)	3B (radio button)
Pair #4	4A (radio button)	4B (radio button)
Pair #5	5A (radio button)	5B (radio button)

[Waiting Screen]

[New Screen]

Based on your choices, you prefer the paintings by __ (Kandinsky or Klee).

You are assigned to the __ (Kandinsky or Klee) group.

The number of people in your own group is __.

[Waiting Screen]

[New Screen]

You will now receive two more paintings, painting #6 and #7. Please select the artist who you think made the paintings, respectively. For each correct answer, you will be rewarded with an additional 100 tokens. You may find the answer key to the 5 pairs of paintings useful.

Meanwhile, **you can use a group chat program to get help from or offer help to other members in your own group.** Except for the following restrictions, you can type whatever you want in the lower box of the chat program. **Messages will be shared *only* among all the members from your own group.** You will not be able to see the messages exchanged among the other group. People in the other group will not see the messages from your own group either.

Restrictions on messages

1. Please do not identify yourself or send any information that could be used to identify you (e.g. age, race, professional background, etc.).
2. Please refrain from using obscene or offensive language.

How to use the chat program

- Press Alt+Tab to switch to the chat program.
- Please wait while one of the experimenters comes to enter your ID number for you in the chat program.
- You can press Alt+Tab at any time to switch back and forth between the chat program and the decision screen.
- You will be given 10 minutes to communicate with your group members.

Please raise your hand if you have any questions.

My answers are:

Painting #6 is made by	Klee (radio button)	Kandinsky (radio button)
Painting #7 is made by	Klee (radio button)	Kandinsky (radio button)

[New Screen]

Please switch to the chat program by pressing Alt+Tab and close it.
You will find out your payoff from Part 1 at the end of the experiment.

[Waiting Screen]

[New Screen]

Now we start Part 2 of the experiment. You will be asked to make decisions in 5 rounds. In each round, you will have a certain number of tokens. The number varies from round to round. You will be asked to allocate these tokens between two other participants under three scenarios

1. if both are from your own group,
2. if both are from the other group, or
3. if one is from your group, and one is from the other group.

For each scenario, you must allocate *all* tokens between the two participants. Allocations have to be integers. *Do not allocate any tokens to yourself.* Your answers will be used to determine other participants' payoffs. Similarly, your payoff will be determined by others' allocations.

After everyone finishes recording their decisions, the computer will randomly select a round among the five rounds that is used to calculate the payoffs. Each round of decisions will have an equal chance of being chosen.

Next, the computer will generate a random sequence of the ID numbers. The first number in the sequence will be the ID number of the person who allocates to the second and third IDs. The second ID drawn will allocate to the third and fourth IDs, , and so on. The last ID will allocate to the first and second IDs. Therefore, your payoff will be the sum of tokens allocated to you by the two participants preceding you.

For example, the computer generates the following sequence of the ID numbers, 9, 4, 1, 5, 12, ..., 2, and 3. Then subject 9 will allocate tokens to subject 4 and 1. Subject 4 will allocate tokens to subject 1 and 5, ..., and so on. Subject 3 will allocate to subject 9 and 4. Therefore, subject 1's payoff will be the sum of the tokens allocated to her by subject 9 and subject 4.

[New Screen]

Please record your decisions under the three scenarios below.

Note: For each scenario, you must allocate *all* tokens between the two participants. Allocations have to be integers. *Do not allocate any tokens to yourself.*

Round 1

- | | | | | |
|------|--|---|--|--------------|
| i) | A from your own group
() | + | B from your own group
() | = 200 tokens |
| ii) | A from the other group
() | + | B from the other group
() | = 200 tokens |
| iii) | A from your own group
() | + | B from the other group
() | = 200 tokens |

[New Screen]

Please record your decisions under the three scenarios below.

Note: For each scenario, you must allocate *all* tokens between the two participants. Allocations have to be integers. *Do not allocate any tokens to yourself.*

Round 2

- i) A from your own group B from your own group
 () + () = 250 tokens
- ii) A from the other group B from the other group
 () + () = 250 tokens
- iii) A from your own group B from the other group
 () + () = 250 tokens

[New Screen]

Please record your decisions under the three scenarios below.

Note: For each scenario, you must allocate *all* tokens between the two participants. Allocations have to be integers. *Do not allocate any tokens to yourself.*

Round 3

- i) A from your own group B from your own group
 () + () = 300 tokens
- ii) A from the other group B from the other group
 () + () = 300 tokens
- iii) A from your own group B from the other group
 () + () = 300 tokens

[New Screen]

Please record your decisions under the three scenarios below.

Note: For each scenario, you must allocate *all* tokens between the two participants. Allocations have to be integers. *Do not allocate any tokens to yourself.*

Round 4

- i) A from your own group B from your own group
 () + () = 350 tokens
- ii) A from the other group B from the other group
 () + () = 350 tokens
- iii) A from your own group B from the other group
 () + () = 350 tokens

[New Screen]

Please record your decisions under the three scenarios below.

Note: For each scenario, you must allocate *all* tokens between the two participants. Allocations have to be integers. *Do not allocate any tokens to yourself.*

Round 5

- | | | | | |
|------|--|---|--|--------------|
| i) | A from your own group
() | + | B from your own group
() | = 400 tokens |
| ii) | A from the other group
() | + | B from the other group
() | = 400 tokens |
| iii) | A from your own group
() | + | B from the other group
() | = 400 tokens |

[New Screen]

You will find out your payoff from Part 2 at the end of the experiment.

[New Screen]

Now we start Part 3 of the experiment. You will make decisions in 7 different games. Each decision and outcome is independent of each of your other decisions, so that your decisions and outcomes in one game will not affect your outcomes in any other game.

In every game, you will be anonymously matched with one other participant. You will then be asked to make a decision under two scenarios

1. if your match comes from *your own group*;
2. if your match comes from *the other group*.

For every decision task, you will be randomly matched with a different participant than in the previous decision. Your decision may affect the payoffs of others, just as the decisions of your match may affect your payoffs.

There are roles in each game, A or B. Some games only have decisions for one role whereas other games have multiple decisions. In games with multiple decisions, these decisions will be made sequentially, in alphabetical order: person A will make a decision first and, next, person B will make a decision.

You will not be informed of the results of any previous period or game prior to making your decision.

Only two out of the seven games played will be randomly selected by the computer for computing payoffs. Each game is equally likely to be drawn.

We will proceed to the decisions once the instructions are clear. Are there any questions?

[New Screen, Game 1, Player A]

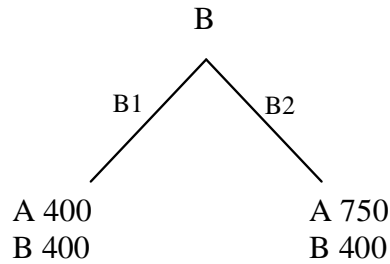
In this period, you are person A.

You have no choice in this game.

Person B's choice determines the outcome.

If person B chooses B1, you will each receive 400.

If person B chooses B2, you will receive 750, and person B will receive 400.



I have no choice in this game.

Okay

[New Screen, Game 1, Player B]

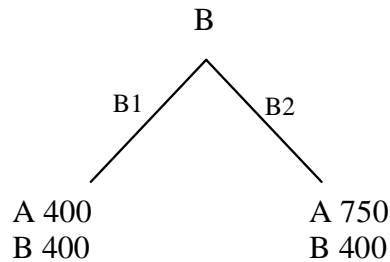
In this period, you are person B.

You may choose B1 or B2.

Person A has no choice in this game.

If you choose B1, you will each receive 400.

If you choose B2, person A will receive 750 and you will receive 400.



Decision

If person A is from my own group, I choose B1 (radio button) or B2 (radio button).

If person A is from the other group, I choose B1 (radio button) or B2 (radio button).

Submit

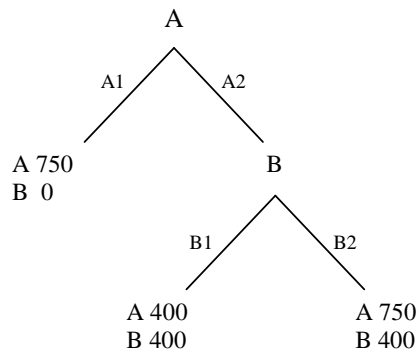
[New Screen, Game 3, Player A]

In this period, you are person A. You may choose A1 or A2.

If you choose A1, you will receive 750, and person B will receive 0.

If you choose A2, then person B's choice of B1 or B2 will determine the outcome. If you choose A2 and person B chooses B1, you will each receive 400. If you choose A2 and person B chooses B2, you will receive 750, and s/he will receive 400.

Person B will make a choice *without* being informed of your decision. Person B knows that his or her choice only affects the outcome if you choose A2, so s/he will choose B1 or B2 on the assumption that you have chosen A2 over A1.



Decision

If person B is from my own group, I choose A1 (radio button) or A2 (radio button).

If person B is from the other group, I choose A1 (radio button) or A2 (radio button).

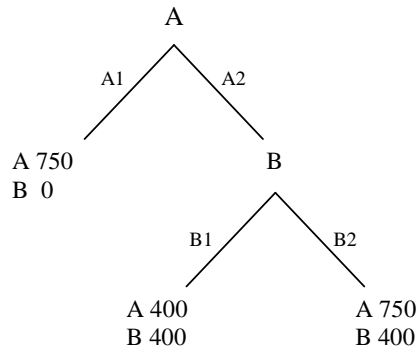
[Submit](#)

[New Screen, Game 3, Player B]

In this period, you are person B. You may choose B1 or B2.

Person A has already made a choice. If s/he has chosen A1, s/he will receive 750, and you will receive 0. Your decision only affects the outcome if person A has chosen A2. Thus, you should choose B1 or B2 on the assumption that person A has chosen A2 over A1.

If person A has chosen A2 and you choose B1, you will each receive 400. If person A has chosen A2 and you choose B2, then person A will receive 750, and you will receive 400.



Decision

If person A is from my own group, I choose B1 (radio button) or B2 (radio button).

If person A is from the other group, I choose B1 (radio button) or B2 (radio button).

Submit

[New Screen]

You will find out your payoff from Part 3 at the end of the experiment.

OK

[New Screen]

In Part 1, the correct answers to the two painting questions are

#6 by Klee

#7 by Kandinsky.

Your payoff from Part 1 is __ tokens.

In Part 2, round __ is selected to compute the payoffs.

The sequence of the ID numbers is __.

Your payoff from Part 2 is __ tokens

In Part 3, round __ and __ are selected to compute the payoffs.

Your payoff from Part 3 is __ tokens.

Your total payoff is __ tokens.

The exchange rate is \$1 = 100 tokens.

The show up fee is \$5.

So your earning from this experiment is \$__.

Please remain seated and you will be asked to complete a survey.

2 Post-Experiment Survey

(summary statistics in italics in parentheses)

Please answer the following survey questions. Your answers will be used for this study only. Individual data will not be exposed.

1. What is your age? _____ (*Mean 21.1, Std Dev 3.2, Median 21, Min 17, Max 37*)
2. What is your gender?
 - (a) Female (*56.9%*)
 - (b) Male (*43.1%*)
3. How many siblings do you have? _____ (*0 siblings 10.0%, 1-2 73.4%, 3 or more 16.6%*)
4. What is your major at the University of Michigan? _____
5. Are you an undergraduate or graduate student?
 - (a) Undergraduate student (*82.3%*)
 - (b) Graduate student (*17.7%*)
6. Which year are you in your program? (*Mean 2.4, Std Dev 1.3, Median 3, Min 1, Max 9*)
7. Have you ever participated in any economics or psychology experimental studies before?
 - (a) Yes. (*74.1%*) Please specify the number of times _____
(*Mean: 5.0, Std Dev 5.2, Median 4, Min 1, Max 50*)
 - (b) No. (*25.9%*)
8. What do you consider your racial or ethnic background to be?
 - (a) White (*48.2%*)
 - (b) Black (*11.0%*)
 - (c) Hispanic (*4.0%*)
 - (d) Asian (*30.3%*)
 - (e) Other, please specify _____ (*6.5%*)
9. In the past twelve months, have you donated money to or done volunteer work for charities or other nonprofit organizations?
 - (a) Yes. (*72.0%*) Please specify the amount \$ _____ (*Mean 262, Std Dev 1,072, Median 50, Min 0, Max 13,000.*) or the number of hours _____ (*Mean 64.5 hours, Std Dev 115, Median 30, Min 0, Max 1,200.*)
 - (b) No. (*28.0%*)
10. You were assigned to the _____ group during the experiment.

- (a) Klee (39.9%)
 - (b) Kandinsky (60.1%)
11. On a scale from 1 to 10, please rate how much you think communicating with your group members helped solve the two extra painting questions. (*Mean 6.27, Std Dev 2.97, Median 7, Min 1, Max 10*)
12. On a scale from 1 to 10, please rate how closely attached you felt to your own group throughout the experiment. (*Mean 4.0, Std Dev 2.7, Median 3, Min 1, Max 10*)
13. In Part 2 when you were asked to allocate money between two other participants, how would you describe the strategies you used?
- (a) Try to allocate money equally between them. (38.0%)
 - (b) Try to allocate more money to the one who was from your own group. (46.6%)
 - (c) Try to allocate more money to the one who was from the other group. (1.3%)
 - (d) Randomly (8.6%)
 - (e) Other. (5.5%) Please specify _____
14. In Part 3 when you were asked to decide on payoffs received by your match and yourself, how would you describe the strategies you used? Please select all that apply.
- (a) Try to earn as much money as possible for myself. (52.2%)
 - (b) Try to earn as much money as possible for me and my match. (49.4%)
 - (c) Try to earn more money than my match. (6.3%)
 - (d) Reward those who were nice to me and punish those who were nasty to me. (8.9%)
 - (e) Other. (9.3%) Please specify _____
15. In Part 3 when you were asked to decide on payoffs received by your match and yourself, did it affect your decision in any way which group your match came from?
- (a) Yes (Go to Question 16) (34.5%)
 - (b) No (Go to Question 17) (65.5%)
16. Please tell us how your match's group membership affected your decision. Compared with having a match from the other group, if I was matched with someone from my own group:
- (a) I was more likely to choose equal payoff. (34.2%)
 - (b) I was more likely to be nice to my match when she was nice to me. (12.6%)
 - (c) I was more likely to punish my match if she was not nice to me. (2.0%)
 - (d) I was more likely to choose actions that increase our total payoff. (36.7%)
 - (e) I was more likely to help him/her at my own expense. (3.5%)
 - (f) Other. (11.1%) Please specify _____.
17. On a scale from 1 to 10, please rate how familiar you were with the paintings made by Klee and Kandinsky, respectively, before this experiment. (*Klee: Mean 1.5, Std Dev 1.5, Median 1, Min 1, Max 10. Kandinsky: Mean 1.9, Std Dev 2.0, Median 1, Min 1, Max 10*)

References

Chen, Yan and Sherry Xin Li. 2008. “A CES Model of Group Identity and Social Preferences.” Unpublished.

Cox, James C., Daniel Friedman, and Steven Gjerstad. 2007. “A Tractable Model of Reciprocity and Fairness.” *Games and Economic Behavior*, 59 (1), 17–45.