Mock Screens Political Convention Game for O-Tree

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2016

**Foreword**

This document contains a description for the design of a three-player political convention game for O-tree. The document consists of four parts. First, a series of mock screens are shown to give an impression of the mechanics of the game. Second, a list of possible issues and its possible solutions are given. Third, a list of all variables that need to be saved is given. Fourth and final, a list of all parameters that need to be adjusted is given.

I’m looking forward to seeing your time and price estimation. In case you have any questions about the game and its mechanics, feel free to contact me at joeriwissink@tilburguniversity.edu.

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# Mock screens

**Welcome!**

Dear participant,

Thank you for taking part in this study.

Please enter your password and click continue:

Continue

**Lobby**

Dear participant,

Thank you for taking part in this study. In 15:00 minutes, you will be automatically forwarded to the instructions of the study.

Please make sure you will be ready to start when the timer hits zero.

**Informed consent**

Dear participant,

Thank you for waiting. Please read the following information carefully before continuing.

In the next X minutes, you will be interacting with other participants. In these interactions, you will be able to earn points based on your performance. At the end of the study, the points that you have acquired will be transformed into a real monetary bonus (specify conversion rule). Whereas you always receive your “show-up fee” of $X, you will only earn this extra bonus if you complete all 10 games in this study. If you leave the study before the end, you will not receive any bonus payment.

As other players are dependent upon your actions, this study requires your full attention. Whenever you do nothing for 45 seconds (including cursor movement) when you are reading instructions or when you are asked to make a decision, you will receive a warning message. The same goes for when you have stayed on one page for too long. If you do not respond to this warning message in 30 seconds, you will be excluded from the study. Moreover, you will forgo your bonus payment.

Note: Whenever a player you are interacting with drops out (due to connection error or otherwise) you will temporarily play with a computer player. This computer player will make decisions based on how human participants have acted in the past. You will not be notified when you are playing with a computer player.

If you accept these terms, please press the continue button to move to the general instructions.

Continue

**Instructions 1/4**

You are about to participate in a study in which you interact with other participants. In this study, there are three players: Player A, Player B, and Player C. All participants will be assigned to these positions, so that multiple participants take the position of Player A, multiple participants take the position of Player B, and multiple participants take the position of Player C. The allocation to these positions will be made known at the start of the session (Game 1). Participants assigned to a certain position will have that position for the entire session.

The session will be last 10 games. The number of the current game is displayed in the upper part of the screen.

On the next couple of screens, you will read the steps taken in each of the 10 games. Please read these instructions carefully.

Please press continue to go to the next screen.

Continue

**Instructions 2/4**

In this study, we conduct research on how people negotiate and form coalitions.

You are one of three people negotiating how to allocate a sum of **100 points**, an outcome that is equally important to all of you. It is important to realize that you are not able to obtain the outcome by yourself and consequently you need to join forces with another individual. This means that you need to form a coalition in which you need to reach an agreement about the allocation of the outcome.

On the following page we will explain more about the bargaining position of each person and the possible coalitions.

Please press continue to go to the next screen.

Continue

**Instructions 3/4**

In the current situation, it is important to realize that not all people have an equal bargaining position. Specifically, **A** controls **3 votes**, **B** controls **2 votes** and **C** controls **2 votes**. As this totals 7 votes, any coalition that controls **at least 4 votes** controls a majority of the votes. A coalition needs this majority of the votes in order to allocate the **100 points** among the members of the coalition. Thus possible coalitions are coalitions between A and B (**AB** coalition with **5 votes**), B and C (**BC** coalition with **4 votes**), between A and C (**AC** coalition with **5 votes**), and a coalition between A, B, and C (**ABC** coalition with **7** votes).

Importantly, payoffs can only be allocated to members of a coalition. This means that an AB coalition can allocate the outcomes to A and B (but not to C), a BC coalition can allocate outcomes to B and C (but not to A), and an AC coalition can allocate outcomes to A and C (but not to B).

If you are included in one of the abovementioned coalitions you will be able to get a share of the outcomes. However, if you are not included in one of the coalitions you will not be able to get a share of the outcomes. Moreover, after the bargaining is over, votes have no value.

On the following page we will explain how the forming of coalitions takes place.

Please press continue to go to the next screen.

Continue

**Instructions 4/4**

As mentioned earlier, you will play multiple games as either Player A, Player B, and Player C. One game contains multiple phases, which will are explained below.

Phase I: Making offers.

In an attempt to form a coalition in which one is included, every player will make an offer to one or more other players to form a coalition. This offer is made by sending them an offer how to allocate the 100 points between themselves and the ones they are making an offer to.

Phase II: Choosing offers.

When everyone has made their offers, all offers are displayed to all players. Players then choose which of the shown coalitions they want to form. That is, they either select their own offer or an offer made by another player that includes them in a coalition.

Phase III: Seeing acceptance of offers.

When everyone has chosen an offer all chosen offers are displayed. If all those who are involved in a certain coalition offer select that offer, the coalition is formed and the 100 points is distributed as shown in the offer. If no coalition is selected by all its potential members, no coalition is formed and players will enter another bargaining round and return to Phase I: Making offers. In principle, there can be many bargaining rounds until a coalition is formed and the game ends.

When a game has ended, everyone participating in the experiment (all different players A, B, and C) are randomly matched to play a new game This means that you will attain your own position (if you are Player A, you will still be player A), but you will be matched with another Player B and another Player C than in the previous game.

Remember that the session has 10 games and you will not receive any bonus payment unless you play all 10 games.

Please press continue to go to the next screen.

Continue

**Comprehension Check**

Before playing the first game, we want to ask you a few questions to check whether you have understood the instructions.

Question 1

* A
* B
* C

Question 2

* A
* B
* C

Question 3:

* A
* B
* C

Continue

**Position assignment**

You will now be randomly assigned to the position of Player A, B or C.

Pleas press the continue button to be assigned to a position. As all other individuals participating in the experiment are required for this, this may take a few minutes. Thank you for your patience.

Continue

**You are Player A**

You have been assigned to the position of Player A, meaning that you have 3 votes. You will hold this position over all games in the session.

To reiterate: your bargaining partners are Player B (holding 2 votes) and Player C (holding 2 votes). If you form a coalition with at least 4 votes, you will gain a share of the outcomes as agreed on.

Please press continue to go to the first game.

Continue

**Game 1: Phase I – Bargaining Round I**

Send an offer to the player(s) you want to form a coalition with by indicating how much points you want to keep and how many points you want to offer the other player(s) when forming a coalition.

Please select with whom you want to form a coalition

I want to form a coalition with:

* B
* C
* B and C

Please indicate what your offer in terms of divided points is (total should be 100).

60

Player A (you): points

40

Player B: points

0

Player C: points

Continue

**Game 1: Phase I – Bargaining Round I**

You have proposed the following offer: A coalition between you and Player B, in which you get 60 points and Player B gets 40 points.

Are you sure you want to send this offer?

* Yes
* No

Continue

**Game 1: Phase II – Bargaining Round I**

The following offers were sent:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Player making offer** | **Proposed coalition** | **Payoff Player A** | **Payoff Player B** | **Payoff Player C** |
| A (you) | AB | 60 points | 40 points | 0 points |
| B | ABC | 10 points | 80 points | 10 points |
| C | BC | 0 points | 30 points | 70 points |

Please select which coalition you want to form:

* AB Coalition (60-40-0)
* ABC Coalition (10-80-10)

Continue

**Game 1: Phase III – Bargaining Round I**

**No coalition has been formed.** Below you can find which offers have been selected.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Player making offer** | **Proposed coalition** | **Payoff Player A** | **Payoff Player B** | **Payoff Player C** | **Selected by** |
| A (you) | AB | 60 points | 40 points | 0 points | Player A (you) |
| B | ABC | 10 points | 80 points | 10 points | Player B |
| C | BC | 0 points | 30 points | 70 points | Player C |

Press continue to start a new bargaining round.

Continue

**Game 1: Phase I – Bargaining Round II**

Send an offer to the player(s) you want to form a coalition with by indicating how many points you want to keep and how many points you want to offer the other player(s) when forming a coalition.

Please select with whom you want to form a coalition

I want to form a coalition with:

* B
* C
* B and C

Please indicate what your offer in terms of divided points is (total should be 100).

50

Player A (you): points

50

Player B: points

0

Player C: points

Continue

**Game 1: Phase I – Bargaining Round II**

You have proposed the following offer: A coalition between you and Player B, in which you get 50 points and Player B gets 50 points.

Are you sure you want to send this offer?

* Yes
* No

Continue

**Game 1: Phase II – Bargaining Round II**

The following offers were sent:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Player making offer** | **Proposed coalition** | **Payoff Player A** | **Payoff Player B** | **Payoff Player C** |
| A (you) | AB | 50 points | 50 points | 0 points |
| B | ABC | 30 points | 40 points | 30 points |
| C | BC | 0 points | 40 points | 60 points |

Please select which coalition you want to form:

* AB Coalition (50-50-0)
* ABC Coalition (30-40-30)

Continue

**Game 1: Phase III – Bargaining Round II**

**A coalition has been formed.** Below you can find which offers have been selected. The formed coalition in displayed in red.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Player making offer** | **Proposed coalition** | **Payoff Player A** | **Payoff Player B** | **Payoff Player C** | **Selected by** |
| A (you) | AB | 50 points | 50 points | 0 points | Player A (you)  Player B |
| B | ABC | 30 points | 40 points | 30 points | None |
| C | BC | 0 points | 40 points | 60 points | Player C |

Press continue.

Continue

**Game I: Recap**

|  |  |
| --- | --- |
| Income game I | 50 points |
| Total income session | 50 points |

Press continue to go the next game. This might take a few seconds as you might have to wait for other players.

Continue

**Debriefing**

Dear participant,

Thank you for playing through all 10 games. You have now reached the end of the session.

Throughout the whole session you have earned X points, which is converted to $X.

Please enter the following code in the box in MTurk to end the study. You will then receive your bonus within a few days.

Code: XX XX XX

# Possible issues and their solutions

In this section you will find a few issues that might pose a problem to conducting the experiment in a smooth manner including its solutions.

1. “Screensaver” and auto removal of participants

Being a synchronous experiment, it is important that participants do not stall the experiment for other players. Therefore, a mechanism should be built in that prompts participants when they have been idle for too long. This means that once participants are beyond the preexperiment lobby there should be a sort of “screensaver” (as used by Mao. et al (2012) in their turkserver experiments) active whenever other players are dependent on them to continue the game (i.e. whenever they have to make a decision or when they are reading instructions). This safeguard should give participants a warning when the player has done nothing for x seconds (including mouse movements). Moreover, a text will be displayed stating “Warning: you have been idle for too long. Move your cursor in order not to be excluded from this study.” After another x seconds have passed and the player has not done anything (e.g. clicked a button, went to another screen or moved their mouse), the player should be automatically removed from the session and receive the message: “You have failed to comply with the instructions of this study. Your contribution is not accepted and you will receive no payment.” When the player does anything (including moving their mouse) within these x seconds, the timer to receive a warning should be reset.

1. Timer on pages

Similar to the safeguard described above, there should be one that keeps participants from staying on one page for too long (otherwise, participants can keep moving their mouse in one screen and stall the experiment anyway). If participants stay on one page for too long, they will receive the same warning sound and a text that reads “Warning: In order to continue, you must make a decision. Please make a decision now or you will be excluded from the experiment.” If participants fail to make a decision within 30 seconds, they are automatically removed from the session and get the same message as above: “You have failed to comply with the instructions of this study. Your contribution is not accepted and you will receive no payment.” When the player goes to the screen within these x seconds, the timer to receive a warning should be reset. Time that participants are allowed to stay on a screen differ per screen as well as on the game they are in. When participants are on the Consent Form, General Instructions screens or, Comprehension Check they should have some more time to continue to the next page before they get the warning. The first game participants will also have a little more time before getting the warning. Note that for the Comprehension Check, the program sees pressing the continue button as moving to the next page, so that participants are not excluded from the experiment because they fail to give the correct answer in time.

1. The use of bots

Being an experiment that relies on interaction, the dropping out of one participant (due to a failing internet connection or by exclusion through idleness) will have consequences for other players if not handled carefully. In this case we need a ‘bot’ to take over, i.e. an automated response by the program that mimics a participant. If in the middle of a game, the dropped out participant should me seamlessly replaced by a bot without the partner noticing it. If a participant drops out while in the between-games lobby and this results in the existence of an incomplete triad to play a game, in the randomization phase, one participant should be coupled with a bot.

Bots should be bound to the following rules:

* A both should make an offer to a random human participant. If one human participants interacts with two bots, bots should make their offer to the human participant.
* Bots should randomly make one of two offers:
  + A 50-50 offer.
  + An offer that is proportionate to the amount of votes of the bot and the one receiving the offer (e.g., a bot with 3 votes making an offer to a human with 2 votes has 60% of votes of the proposed coalition (3+2=5 votes) and thus makes a 60-40 offer).

1. Reconnecting players

When a player is disconnected from the experiment due to a connection error (NOT due to being exclude due to idleness) they are ideally able to reconnect them to the existing experiment and resume their previous position. When a participant is reconnect, they are asked to wait until the other players finish their games and will be randomly assigned to another player in the next game.

1. One experimental session per participant

Whereas the installment of timers already makes it hard for participants to not pay attention to the experiment, it is conceivable that some participants will try to log in to the lobby multiple times (to get more show-up fees) or, in the case that two or more groups of people can play the experiment at the same time. Because of this, it is important that the program can identify participants by their IP-address and/ or their Mechanical Turk worker ID, and limits their actions so that they can log into the lobby only once and participate in one experimental session.

# List of variables to be recorded by the program:

|  |  |
| --- | --- |
| **Variable** | **Possible Values** |
| Participant ID | Integer starting with 1 and ascending |
| Bargaining position | A, B, or C |
| Coalition partners IDs in each game | The participant IDs of coalition partners (2 variables) |
| Game number. This is a number given to a specific triad of bargaining partners in every game of the session. | Integer (min 1, max = number of games \* number of triads) |
| Proposed coalition Player A | AB, AC, or ABC |
| Proposed coalition Player B | AB, BC, or ABC |
| Proposed coalition Player C | AC, BC, or ABC |
| Offered share of the outcomes by a player for each player in game (multiple if multiple bargaining rounds) | Three integers (one for A, one for B and one for C) that add up to the total sum of outcomes |
| Offers selected in each game by each player (multiple if multiple offers sent before forming coalition) | Offer made by A, offer made by B, or offer made by C |
| Number of bargaining rounds before coalition is formed | 1 and ascending with each additional bargaining round |
| Formed coalition in each round | AB, AC, BC, ABC or None if max nr of bargaining rounds is reached |
| Final distribution of outcomes in each game | Three integers (one for A, one for B and one for C) that add up to the total sum of outcomes |
| Score at the end of game | Any integer |
| Score at the end of session | Any integer (sum of game scores) |
| Number of times comprehension question answered incorrectly | For every question this starts with 0 and this number ascends for every mistake made at that question |
| Time on page | Ascending time in seconds |
| MTurk Worker ID (if applicable) | Alphanumerical string |
| For every displayed screen, a variable should be created which records that the screen has been shown to a participant. | The initial value of these variables is 0. Once the page has been shown to the participant, this value changes to 1 |
| For every screen, a variable should be created which records how much time participants have spent before moving to the next screen in seconds | Ascending time in seconds |
| For every screen, a variable should be made that indicates how many times participants get a warning due staying on a screen for too long. | The initial value for all variables is 0 and increases by 1 once a participant receives the warning on the page. |
| If participants are excluded due to not responding to the warning a variable should be created. This variable should then record on which screen the participants are currently on. | Number of screen |
| If a participant drops out in another way than being excluded due to idleness, a variable should be created (if a participant drops out multiple times, multiple variables should be created). This variable then records on which screen participants were when they dropped out. | Number of screen |

# List of adjustable parameters

|  |  |
| --- | --- |
| **Parameter** | **Possible Values** |
| Number of games | Any integer |
| Number of seconds before idle warning instruction screen | Any integer |
| Number of seconds before warning too long on page instruction screen | Any integer |
| Number of seconds before booted from study after warning | Any integer |
| Number of seconds before idle warning game 1 | Any integer |
| Number of seconds before warning too long game 1 | Any integer |
| Number of seconds before idle warning other games | Any integer |
| Number of seconds before warning too long other games | Any integer |
| Randomization to different positions between games | On or off |
| Random assignment to different bargaining partners between games | On or off |
| Possibility to have and allocate negative points | On or off |
| Total sum of outcomes | Any integer (negative and positive – depends on settings) |
| Amount of starting points for each game player A | Any integer (negative and positive – depends on settings) |
| Amount of starting points for each game player B | Any integer (negative and positive – depends on settings) |
| Amount of starting points for each game player C | Any integer (negative and positive – depends on settings) |
| Amount of votes player A | Any integer |
| Amount of votes player B | Any integer |
| Amount of votes player C | Any integer |
| Amount of votes necessary for coalition | Any integer |
| Choosing a coalition before formation (Step II) | On (add step II) or off (immediate formation) |
| Maximum number of bargaining rounds possible | Any positive number or infinite |
| Payoff to player A when maximum number of bargaining rounds is reached | Any integer (negative and positive) |
| Payoff to player B when maximum number of bargaining rounds is reached | Any integer (negative and positive) |
| Payoff to player C when maximum number of bargaining rounds is reached | Any integer (negative and positive) |
| Possibility A to propose an AB coalition | On or off |
| Possibility A to propose an AC coalition | On or off |
| Possibility A to propose an ABC coalition | On or off |
| Possibility B to propose an AB coalition | On or off |
| Possibility B to propose a BC coalition | On or off |
| Possibility B to propose an ABC coalition | On or off |
| Possibility C to propose an AC coalition | On or off |
| Possibility C to propose a BC coalition | On or off |
| Possibility C to propose an ABC coalition | On or off |
| Possibility to give A money in an AB coalition | On or off |
| Possibility to give A money in an AC coalition | On or off |
| Possibility to give A money in an BC coalition | On or off |
| Possibility to give A money in an ABC coalition | On or off |
| Possibility to give B money in an AB coalition | On or off |
| Possibility to give B money in an AC coalition | On or off |
| Possibility to give B money in an BC coalition | On or off |
| Possibility to give B money in an ABC coalition | On or off |
| Possibility to give C money in an AB coalition | On or off |
| Possibility to give C money in an AC coalition | On or off |
| Possibility to give C money in an BC coalition | On or off |
| Possibility to give C money in an ABC coalition | On or off |