Game Theory Task Manual

clear and get path

You should open the folder Game Theory in your computer. If you choose a wrong directory, the code can not be run.
p: Path of the Game Theory directory

settings - session settings

A dialogue input box to get session info is shown. 4 variables should be inserted in the text boxes. Experimenter' name, block number, Player 1' name, and player 2 respectively.

The values can be pre-defined in the prompt variable.
There are 4 block types in this experiment as below, so you should insert a correct block type to get the correct response:
Block 1: Subject is the player 1, with the cooperative opponent.
Block 2: Subject is the player 1, with the non-cooperative opponent.
Block 3: Subject is the player 2, with the cooperative opponent.
Block 4: Subject is the player 2, with the non-cooperative opponent.

expName: Experimenter'
block: Block type
player1: Player 1' name
player2: Player 2' name

settings - trial numbers & return strategy

trialNums: number of trials in each block
According to the type of block, the variables state, returnStrategy and payStrategy are defined.

Block	Strategy	Strategy variables	Initial State
1	Cooperative	returnStrategy = 1	state = 'stateRT1'
2	Noncooperative	returnStrategy = 2	state = 'stateRT1'
3	Cooperative	payStrategy = 1	state = 'stateT4'
4	Noncooperative	payStrategy = 2	state = 'stateT4'

settings - time variables

tOpponFix: Period of the time in seconds to show a fixation mark in the beginning of each block.
tOpponIntro: Period of the time in seconds to show opponent picture in the beginning of each block.
tCue: Period of the time in seconds to show fixation mark in the beginning of each trial.
maxRT1: Maximum time for getting response from player 1 in block 1 and 2.
maxRT2: Maximum time for getting response from player 1 in block 3 and 4.
T1: Period of the time in seconds to wait in T1 phase of trial.
T2: Period of the time in seconds to wait in T2 phase of trial.
T3: Period of the time in seconds to wait in T3 phase of trial.
T4: Period of the time in seconds to wait in T4 phase of trial.
T5: Period of the time in seconds to wait in T5 phase of trial.

%% settings - reserved variables

P1Deposit: Initial value of deposit for player 1
P2Deposit: Initial value of deposit for player 2
x: $deposit_{t=now} - deposit_{t=previous}$ (Do not predefine this variable)
tempoP1Reserve: temporal value of deposit for player 1 during task- this value is not saved in the main data-table and is just a temporal variable. (Do not predefine this variable)
tempoP2Reserve: temporal value of deposit for player 2 during task- this value is not saved in the main data-table and is just a temporal variable. (Do not predefine this variable)

settings - return strategy / pay strategy

you can define return and pay strategies here. According the predefined strategies by researchers, the percentage of generous, recip, and selfish trials are set. returnArray is an array consist of an array of trialNum cells that randomly get value ‘g’, ‘r’, or ‘s’ depends on the percentage of each strategy.

returnStrategy	Percentage of strategies
1 (Cooperative)	percentGenerous =.25 percentRecip =.5 percentSelfish =.25

2(Noncooperative)	percentGenerous =.25 percentRecip =.25 percentSelfish =.5

payStrategy	Percentage of strategies
1 (Cooperative)	percentGenerous = percentRecip = percentSelfish =
2(Noncooperative)	percentGenerous = percentRecip = percentSelfish =

settings - screen parameters and variables

width: width of the screen
height: height width of the screen
winRect: size and location of window
winColor: backgraound color, set to black
colorBox: color of the deposit amount

set texts format

txtSizFix: Text size in fixation phases (+,*,…).
txtSiz: Text size to show the value of deposit on the screen.
Screen('TextFont',wPtr,'Calibri'): Text font.
txtColor: Text color in fixation phases and other areas with black background.
txtColorFlash: Text color on two middle symbols.

settings - load .png files

backgrnd_ = imread(fullfile(p,'suppl','backgroundBlack1.png')): insert name of the main background image consists.
oppoPic = imresize(imread(fullfile(p,'suppl','opponent2.png')),[350,250]): insert name of the opponent player with an appropriate size.

settings - rate of scaling images

This section is for scaling main images on the screen to be fit with any size of the screens. In case you change these images, you have set the size of the objects of it in this section.

settings - texts content

txtOpponFix = '+': symbol to show when there is a fixation period in the beginning of the block.
txtWaiting = '*': symbol to show when there is a fixation period in the middle of each trial.
txtCue = 'X': symbol to show when there is a fixation period in the beginning of each trial.
txtITI = '+': symbol to show when there is an ITI period at the end of each trial.

settings - input device – keyboard

By default, up arrow, down arrow and return keys are set to get response of subjects. You can change these keys to the ones you desire by changing the name of the red ones in below lines:

```
upKey       = KbName('UpArrow');
downKey   = KbName('DownArrow');
enterKey   = KbName('Return');
```

Run Experiment

Response： All the variables in the block are saved into this table.

save

date: This is the date and time of “now”.
At the end of every block, the response table will be saves in the .csv file with the name follow:
player1_block_expName_date.csv
Saved file’s path will be:
p/data_set/player1