Fixing the Moral Blind Spot by Computer-based regulation and Uncertainty

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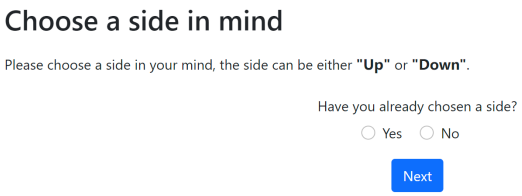
Our experiments have two sessions, and each session contains two experiments. It is important to note that each experiment contains the same die-throwing game, and the procedure would also be the same in multiple rounds. And the only difference among different experiments are the automatic payoff adjustments following the game, which do not need participants to do anything. We intend to see whether face with different kinds of adjustments would affect people's decisions in the die-throwing game. Finally, after the sessions the participants are asked to complete a demographic survey.

Die-throwing game

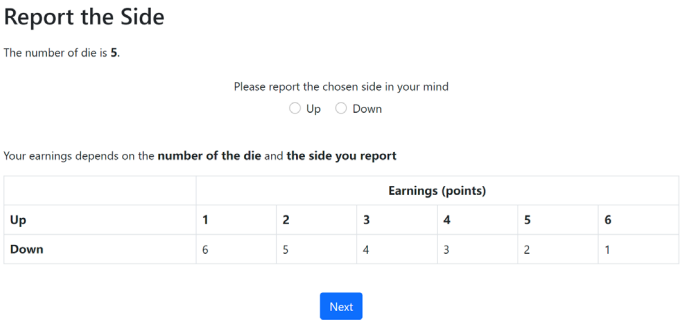
The participants are asked to choose a side either "Up" or "Down" in mind, and report the chosen side after throwing a die.

Page: choose a side in mind



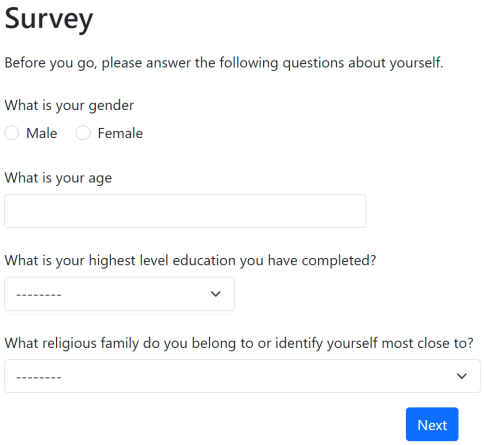
Page: roll the die

Page: report the side in mind



Survey

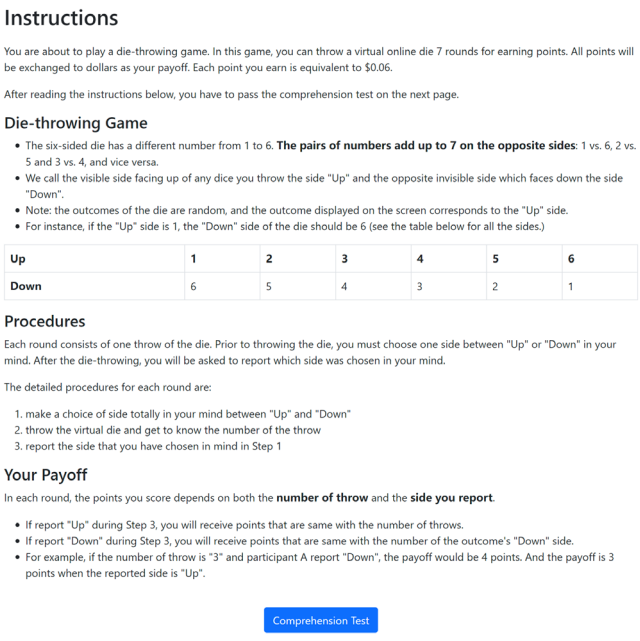
People's age, gender, education, and religious beliefs are collected.



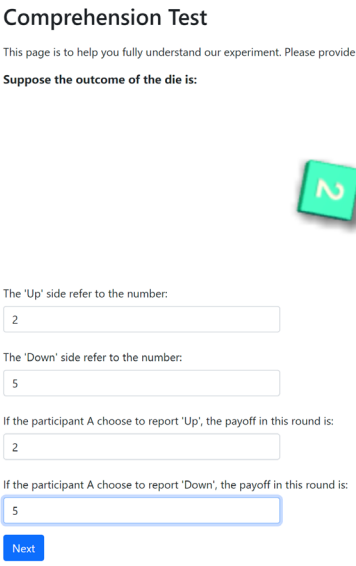
The pages above describe the main questions in our experiment. The following section contains the instructions and comprehension questions.

Session 1: Experiment 1 and Experiment 2

Page: instructions



Page: comprehension test



Experiment 2 in each round:

Page: instructions

Instructions

In this part, you are about to play a **two-stage game** for 7 rounds.

Stage 1: Die-throwing Game

The first stage contains the same die-throwing game from the former part. You should choose a side (i.e. "Up" or "Down") in mind and report the side after throwing a die. The correspondence of "Up" side and "Down" side can be seen at the following table:

Up	**1**	**2**	**3**	**4**	**5**	**6**
Down	6	5	4	3	2	1

Stage 2: Payoff Adjustment

- However, after the die-throwing game, **the computer will make an adjustment to your earnings in each round**.
- The adjustment will be either +3 points or -3 points
- The computer will choose the adjustment with some unknown probability

Procedures

The detailed procedure for each round are following steps:

- make a choice of side totally in your mind between "Up" and "Down"
- throw the virtual die and get to know the number of the throw
- report the side that you have chosen in mind in Step 1
- the computer make an adjustment to your earning with either +3 or -3 points

Your Payoff

Your payoff in each round is the sum of your earning at die-throwing game and the payoff adjustment.

For example, if you got number "3" in die-throwing and reported "Down" side, and the payoff adjustment is +3, your payoff in this round should be (4+3) points.

Comprehension Test

Page: comprehension test

Comprehension Test

This page is to help you fully understand our experiment. Please provide correct answer to the following questions.

If the dice outcome is 5, and participant A choose to report side 'Down', and the payoff adjustment turn out to be +5 points. What is the earning of participant A in this round?

If the dice outcome is 1, and participant A choose to report side 'Up', and the payoff adjustment turn out to be -5 points. What is the earning of participant A in this round?

Next

Session 2: experiment 3 and Experiment 4

Experiment 3:

Page: instructions

Instructions

In this part, you are about to play a **two-stage game** for 7 rounds to earn points. All points will be exchanged to dollars as your payoff. Each point you earn is equivalent to $0.06. After reading the instructions below, you have to pass the comprehension test on the next page.

Stage 1: Die-throwing Game

At the first stage, you are about to play a die-throwing game.

- The six-sided die has a different number from 1 to 6. **The pairs of numbers add up to 7 on the opposite sides**: 1 vs. 6, 2 vs. 5 and 3 vs. 4, and vice versa.
- We call the visible side facing up of any dice you throw the side "Up" and the opposite invisible side which faces down the side "Down".
- Note: the outcomes of the die are random, and the outcome displayed on the screen corresponds to the "Up" side.
- For instance, if the "Up" side is 1, the "Down" side of the die should be 6 (see the table below for all the sides.)

Up	**1**	**2**	**3**	**4**	**5**	**6**
Down	6	5	4	3	2	1

Task

Each round consists of one throw of the die. Prior to throwing the die, you must choose one side between "Up" or "Down" in your mind. After the die-throwing, you will be asked to report which side was chosen in your mind.

Payoff at die-throwing game

In each round, the points you score depends on both the **number of throw** and the **side you report**.

- If report "Up" during Step 3, you will receive points that are same with the number of throws.
- If report "Down" during Step 3, you will receive points that are same with the number of the outcome's "Down" side.
- For example, if the number of throw is "3" and participant A report "Down", the payoff would be 4 points. And the payoff is 3 points when the reported side is "Up".

Stage 2: Payoff Adjustment

- However, after the die-throwing game, **the computer will make an adjustment to your earnings in each round**.
- The adjustment will be either +3 points or -3 points
- The computer will render the adjustment with some unknown probability that **take account of your report decisions**

Procedures

The detailed procedure for each round are following steps:

- make a choice of side totally in your mind between "Up" and "Down"
- throw the virtual die and get to know the number of the throw
- report the side that you have chosen in mind in Step 1
- the computer make an adjustment to your earning with either +3 or -3 points

Your Payoff

Your payoff in each round is the sum of your earning at die-throwing game and the payoff adjustment.

For example, if you got number "3" in die-throwing and reported "Down" side, and the payoff adjustment is +3, your payoff in this round should be (4+3) points.

Comprehension Test

Page: comprehension test

Comprehension Test

This page is to help you fully understand our experiment. Please provide correct answer to the following questions.

Suppose the outcome of the die is:

The 'Up' side refer to the number:

The 'Down' side refer to the number:

If the participant A choose to report 'Up', the payoff in die-throwing game is:

If the participant A choose to report 'Down', the payoff in die-throwing game is:

The probability of which payoff adjustment would happen is known

Yes No

The computer would make an adjustment to your earnings that take account of your report choices

Yes No

If the dice outcome is 5, and participant A choose to report side 'Down', and the payoff adjustment turn out to be +5 points. What is the earning of participant A in this round?

If the dice outcome is 1, and participant A choose to report side 'Up', and the payoff adjustment turn out to be -5 points. What is the earning of participant A in this round?

Experiment 4:

Page: instructions

Instructions

In this part, you are about to play another **two-stage game** for 7 rounds to earn points. All points will be exchanged to dollars as your payoff. Each point you earn is equivalent to $0.06. After reading the instructions below, you have to pass the comprehension test on the next page.

Stage 1: Die-throwing Game

The first stage contains the same die-throwing game from the former part. You should choose a side (i.e. "Up" or "Down") in mind and report the side after throwing a die. The correspondence of "Up" side and "Down" side can be seen at the following table:

Up	**1**	**2**	**3**	**4**	**5**	**6**
Down	6	5	4	3	2	1

Stage 2: Payoff Adjustment

- However, after the die-throwing game, **a computer-based Artificial Intelligence (or "AI") will make an adjustment to your earnings in each round**.
- The adjustment will be either +3 points or -3 points
- The computer-based AI will choose the adjustment with some unknown probability that **take account of your report decisions**

Procedures

The detailed procedure for each round are following steps:

- make a choice of side totally in your mind between "Up" and "Down"
- throw the virtual die and get to know the number of the throw
- report the side that you have chosen in mind in Step 1
- the computer-based AI make an adjustment to your earning with either +3 or -3 points

Your Payoff

Your payoff in each round is the sum of your earning at die-throwing game and the payoff adjustment.

For example, if you got number "3" in die-throwing and reported "Down" side, and the payoff adjustment is +3, your payoff in this round should be (4+3) points.

Comprehension Test

Page: comprehension test

Comprehension Test

This page is to help you fully understand our experiment. Please provide correct answer to the following questions.

The payoff adjustment with unknown probability is done by:

○ AI ○ Computer

The AI would make an adjustment to your earnings that take account of your report choices

○ Yes ○ No

Next