APPENDIX B: EXPERIMENT INSTRUCTIONS

Instructions

Thank you for participating in our study. This is an experiment on decision making. The other people in this room are also participating in the experiment, and you may not talk to them. If you have a question, please raise your hand and an experimenter will come and answer you in private.

You will receive $8 for participating in this experiment, but the decisions you make can further increase these earnings. Any money you make will be paid privately and in cash at the end of the experiment.

Explanations of your task

The experiment will consist of ten scenarios. In each scenario the computer will fill two urns with five balls, either red or blue. We call the urn with more red balls the Red urn, and the one with more blue balls the Blue urn. One of these two urns is selected to be used in the scenario. Your task is to guess how likely it is that the selected urn is the Red urn. Within each scenario you will make a total of three guesses.

Each scenario proceeds as follows:

Computer Fills the Urns: The two urns are filled with five balls each, some blue, some red. You will always see the exact number of blue and red balls in the two urns.

Computer Selects an Urn: The computer selects the Red or the Blue urn by rolling a fair 10-sided die and comparing it to a number \( X \) between 1 and 10. The selected urn is determined as follows:

- If the die roll is less than or equal to \( X \) then the Red urn is selected.
- If the die roll is greater than \( X \) then the Blue urn is selected.

Once the computer selects an urn it is fixed and stays the same for the entire scenario. The die-roll selection rule \( X \) means that the chance the computer selects the Red urn is \( X \)-in-10. For example, suppose \( X=6 \), then there is a six-in-ten chance (60 percent) that the computer selects the Red urn, and a four-in-ten chance (40 percent) that the computer selects the Blue urn.

The number \( X \) will vary across the 10 scenarios. After the computer has filled the two urns and rolled the 10-sided die to determine which urn is selected, you will be asked to make your guesses. At the beginning of each scenario you will learn how many red and blue balls there are in each urn, and the rule the computer used to select an urn (the number \( X \)).

---

36 Treatment differences are indicated with square brackets. In addition, the RCL treatment uses the term Your Submitted Guess instead of Your Guess throughout.
However, you will not learn which of the two urns has been selected until after you have made your guesses.

You are asked to provide your best guess that the computer has selected the Red urn for the scenario. The three questions are ordered as follows:

**Guess 1** Knowing only the rule $X$ that the computer used to select an urn, you provide your first guess that the selected urn is the Red one.

**Guess 2** The computer fairly draws one of the five balls from the selected urn. After seeing the color of this ball, you provide your second guess that the selected urn is the Red one.

**Guess 3** After replacing the first-drawn ball back into the selected urn and mixing it, the computer fairly draws a second ball from the five. After seeing the color of the second ball you provide your third guess that the selected urn is the Red one.

Note that the draws from the selected urn in questions 2 and 3 are independent from one another: After the first draw is made, it is as if the ball is returned to the selected urn before the next draw is made. The contents of the selected urn are therefore always the same when a draw is made, and each of the five balls has the same chance of being drawn in each question.

**[Information, No-Information, RCL, and Feedback treatment: Feedback]** After you have answered the scenario's three questions you learn which urn the computer selected and drew balls from. Your three guesses will be used to determine your chances of winning an $8 prize. Your chance of winning the prize is set so that more-accurate guesses lead to a higher chance of winning.

---

**Your Guess**

For each question you have to guess the chance that the selected urn is the Red one. Your guess is a percentage probability from 0 to 100—with 0 indicating a 0-out-of-100 chance that the selected urn is the Red urn, and 100 indicating a 100-out-of-100 chance. The number you provide is called *Your Guess*.

You choose *Your Guess* by clicking the response bar on your screen. The width of the red part of the bar indicates your guess that the Red urn was selected.

- Larger values of *Your Guess* represent a greater chance that the Red urn was selected and a smaller chance that the Blue urn was selected
- Smaller values of *Your Guess* represent a smaller chance that the Red urn was selected and a greater chance that the Blue urn was selected

The width of the blue part of the bar is $100 - *Your Guess*$, and represents your guess that the Blue urn was selected.

28
[Information, RCL, and Description treatment:

**Payment Rule**

We now explain how *Your Guess* is used to determine whether you win the $8 prize.

- The computer chooses two numbers between 1 and 100, where each number is equally likely, as if rolling two 100-sided dice. These numbers are called *Computer Number A* and *Computer Number B*.
- The computer determines whether you win the $8 prize according to which urn was selected:

  **The selected urn is the Red urn:** You will win the $8 prize if *Your Guess* is greater than or equal to either of the two *Computer Numbers*.

  **The selected urn is the Blue urn:** You will win the $8 prize if *Your Guess* is less than either of the two *Computer Numbers*.

[Information and RCL treatment:

To help you understand the payment rule, as you move *Your Guess* the computer will inform you of:

- The probability of winning the $8 if the Red urn was selected
- The probability of winning the $8 if the Blue urn was selected]

[RCL treatment:

As mentioned above, we designed the payment rule to make sure that your greatest total chance of winning is secured by letting *Your Submitted Guess* equal to your most-accurate guess that the urn is Red (what we will call *Your True Guess* on Red). We provide a calculator to help you determine your total chance of winning the prize given any *True* and *Submitted Guesses*.

The calculator will appear in a gray box on the bottom of your screen. When you have entered *Your True Guess* that the urn is Red the calculator will use *Your Submitted Guess* to compute your total chance of winning. The formula used to calculate your total chance of winning is given by:

\[(\text{True Guess on Red}) \times (\text{Prob. of Winning if Red given Submitted Guess})\]
\[+\]
\[(\text{True Guess on Blue}) \times (\text{Prob. of Winning if Blue given Submitted Guess})\]

**Final Payment**

The payment rule is designed so that you can secure the largest chance of winning the prize by reporting your most-accurate guess. [No-Information and Feedback treatment: The precise payment rule details are available by request at the end of the experiment.]

At the end of the experiment, the computer will randomly choose two of the ten scenarios for payment. From each of these two scenarios, one of the three guesses will be
randomly chosen for payment. Every guess has the same chance of being selected for payment. At the end of each scenario you find out which urn was actually selected, and learn your chance of winning the $8 if the guess is selected for payment.

For the selected questions we will use *Your Guess* and whether the selected urn was the Red urn to determine your chance of winning $8. After determining your chance of winning, the computer will conduct the lottery for the prize to see if you won the $8.

Your payment for this experiment will therefore be:
- $8 if you do not win the $8 on either guess.
- $16 if you win the $8 prize on one of the two selected guesses.
- $24 if you win the $8 prize on both selected guesses

**Summary**

For a brief summary please take a look at the presentation at the front of the lab.