

Technical Appendix to TESTING EXPLANATIONS OF PREFERENCE REVERSAL

Robin P. Cubitt, Alistair Munro and Chris Starmer

ECONOMIC JOURNAL, vol. 114 (July), pp. 709–726

Appendix

Verbal instructions given to subjects

Where instructions differ between groups, the relevant paragraph is given in two versions, with the MV-group version second.

[Square brackets contain prompts for the experimenter not spoken out loud.]

Before we begin let me assure you that there are no tricks in this experiment. We simply want to find out what people do in situations that involve risks and we think it's worth paying to find out. Fortunately, the Economic and Social Research Council think so too and have provided us with the money to pay you. [SHOW THEM]

The experiment consists of a set of tasks. Each task requires you to make a decision. We are not looking for right or wrong answers: we simply want to know how you would choose. This is not a group exercise: we are interested in individual decisions. Please just concentrate on your own screen and answer the questions on your own. There should be no talking during the experiment. The only exception to this is if you want to ask a question. Feel free to raise questions at any stage, but if you do want to ask a question, raise your hand and one of us will deal with it. If at any point you think that you may have made an error, don't try to fix things yourself. Again, just raise your hand and wait for one of us to sort out the problem. In a moment I'll explain what you have to do. Before doing this, would you first fill in and sign the piece of paper headed 'receipt form' which should be on the desk in front you. [Subjects fill in forms]. OK. In a moment I will ask you to enter some personal details which will be stored on the computer. This information is only for our records and will not be used for any other purpose. None of our published results will identify particular individuals. Before we do this, can I emphasise that when I ask you to enter something at the computer you should do just what I have requested and nothing more until specifically asked to do so. As I am giving you instructions, the computer will prompt you for various responses - it might say press the enter key to go on for example - but at this stage, please wait for instructions from me before you go on. OK. Please press the enter key now: Now type in your surname then press the enter key. Then type your first initial, then <enter>. Second initial otherwise *, then <enter>. Type in M for male, or F for female <enter>. Enter your date of birth: the day first, then enter, then month, then year. Now enter your UEA registration number on your registration card: enter only the numbers and ignore any letters at the beginning. Finally enter your school and year.

[WHEN ALL PERSONAL DETAILS HAVE BEEN CONFIRMED] In a moment we will ask you to undertake a series of 18 tasks. All of these tasks require you to make a decision about different lotteries. Each lottery is a situation where you may win money or you may win nothing. When you have completed all of the tasks you will face one lottery for real. Which lottery you face will depend partly on the decisions you have made. I will tell you more about this in a little while.

To get you acquainted with the format of the experiment we will begin with 2 practice tasks. Your responses to these first two tasks will not be analysed and you won't get any kind of payoff from them. In this experiment there are two sorts of task. There are choice tasks and valuation tasks. I will now explain what you have to do in each type of task. We start with a choice task. Please press the spacebar now: then wait. Before each task, a preliminary screen tells you what type of task you are about to face. The current screen tells you that you are about to face a CHOICE task. Now press <enter> but don't do anything else until I ask.

[Practice Task 1]: The screen in front of you now displays a typical choice task. The task is to choose between two options A and B, each of which is a lottery. Option A says: 'you get £5 for numbers 1 to 50'; Option B says 'you get £25 for numbers 1 to 15'. All of the choices you will face involve options described like this. Each option will specify an amount to win and a set of winning numbers.

These numbers - the 1 to 50 for Option A and the 1 to 15 for Option B - refer to the numbers on a set of plastic discs in this bag. [SHOW THEM]. In this bag there are 100 discs with numbers on them running from 1 to 100. At the end of the experiment you will face one option for real.

Suppose that you faced option A for real: we would then ask you to draw a disc from the bag. If that disc were numbered from 1 to 50, you would win £5, if the number you drew was greater than 50, you would not get anything. If instead you faced option B for real, a number from 1 to 15 would win £25 and a number above 15 would win nothing. Any questions? OK, would you now indicate which of the two options you choose by typing either A or B. Then wait.

The computer is now asking you to confirm your decision by pressing the SPACE bar. At this stage you can change your mind. If you press some other key, the computer will ask you to try again. For instance try pressing the letter z now. A blue line appears which asks you to press the enter key. Do this now. Now, press either A or B. The computer is now asking for confirmation. Once you confirm your decision by pressing the space bar, your response for that task is recorded and you cannot change your mind later. Please confirm your choice now by pressing the space bar, then wait. [MAKE SURE EVERYONE HAS GOT BLUE SCREEN]

In the experiment you will face a total of six choices just like this. The amounts to win and the number of winning discs will be different for each pair of options, but otherwise the choices will be just like the practice choice you just faced. Remember that there are no right or wrong answers. We just want to know which option you would choose in each task. We expect different people to give different responses. The other type of task in the experiment is called a valuation task. I will now explain how valuation tasks work with a second practice example. Please press enter now, then wait.

[Practice Task 2]

[PROBABILITY VALUATION GROUP] The second practice task again displays two lotteries. The second lottery which is labelled 'option' is just like the ones you saw before: it gives, 5 for discs 1 to 50. The other which is labelled 'yardstick' is a bit different: the yardstick is exactly the same for all valuations tasks; it has a prize of \$10, but the range of winning discs is missing. The words in yellow above the lotteries tell you what you have to do in a valuation task. Your task is to 'set the missing number of discs so that the yardstick and the option are equally attractive to you'. In other words, set the missing number so that you would be equally happy to have either lottery.

[MONEY VALUATION GROUP] The second practice task again displays two lotteries. The second lottery which is labelled 'option' is just like the ones you saw before: it gives £5 for discs 1 to 50. The other which is labelled 'yardstick' is a bit different: the yardstick is exactly the same for all valuations tasks; it has 100 winning discs, but the amount you win is missing. The words in yellow above the lotteries tell you what you have to do in a valuation

task. Your task is to 'set the missing amount so that the yardstick and the option are equally attractive to you'. In other words, set the missing amount so that you would be equally happy to have either lottery.

[PROBABILITY VALUATION GROUP] I will call the number you give here your valuation for the option because the better you think it is, the more winning discs you would want in the yardstick lottery before you would think it is just as good as the option. Can I stress that your job is not to make the yardstick as attractive as possible. We want you to give the answer which makes the two alternatives equally attractive for you, and as you will see in a moment, we have devised a system of payment which makes it in your interest to give honest and careful answers.

[MONEY VALUATION GROUP] I will call the number you give here your valuation for the option because the better you think it is, the bigger the amount to win you would want in the yardstick lottery before you would think it is just as good as the option. Can I stress that your job is not to make the yardstick as attractive as possible. We want you to give the answer which makes the two alternatives equally attractive for you, and as you will see in a moment, we have devised a system of payment which makes it in your interest to give honest and careful answers.

[PROBABILITY VALUATION GROUP] Remember that, once again, there are no right or wrong answers. We want to know what you think would make the Yardstick and Option equally attractive and we expect different people to give different responses. Any questions? OK. Remember that what you have to do is to set the missing number of discs so that the two lotteries are equally attractive to you. Notice that since you will be specifying a number of discs from the bag, your answer must be between 1 and 100 inclusive¹. To enter your valuation, type in a number between 1 and 100, then press the enter key.

[MONETARY VALUATION GROUP] Remember that, once again, there are no right or wrong answers. We want to know what you think would make the Yardstick and Option equally attractive and we expect different people to give different responses. Any questions? OK. Remember that what you have to do is to set the missing amount so that the two lotteries are equally attractive to you. To enter your valuation, first type the number of pounds followed by the enter key. Then type the number of pence followed by the enter key.

You will then be asked to press the space bar to confirm your entry, but don't do this yet. If you want to change your mind, you can go back by pressing some other key. Try pressing the letter z. Now press enter. The computer will not accept a valuation until you enter a valid response and confirm it. Any questions? Please enter and confirm a valuation for practice Task 2. Remember that once you have confirmed a decision, you cannot change your mind.

[MAKE SURE EVERYONE HAS THE PLEASE WAIT SCREEN] I will now explain what happens at the end of the experiment. Before proceeding at that point, we wait for everybody to complete the tasks. [SWITCH ON OHP; POINT TO OVERHEAD SLIDE] By then, you will have completed a total of 18 tasks, involving twelve options. Six of the tasks will be choices between different pairs of options; the other twelve tasks will ask you to give valuations for each of the twelve individual options. The tasks will be presented in random order. When you have completed all of the tasks, the computer will list the six pairs of options that you chose between. You will each individually roll a dice. The number shown on it will pick out one pair of options. We will call this the selected pair. For example, if the dice shows a one, the first pair of options will be selected. All of the other options then disappear from the screen, leaving just the selected pair. You will then play one of these two options for real. Which it is will be determined either by your choices or by your valuations. You will throw the dice again a second time to decide whether it is your choices or your valuations

¹ ANSWER TO POSSIBLE QUESTION: It is possible that, for some valuation tasks, even with the missing number set at 100, you still think the option is better than the yardstick. We think this unlikely, but under these circumstances the best you can do is to set 100.

which will count. If you get a number from 1–3 in the second dice throw, you will play the option you chose out of the selected pair. So, if in every choice task you choose the option you prefer, you will guarantee that you will play your preferred option from any selected pair. If you get a number from 4–6, you will play the option you gave a higher value to in the valuation tasks. So, if in every valuation task you give valuations which make the yardstick and the option equally attractive to you, you will guarantee that you will play whichever of the selected pair you valued most highly. In the event that you gave equal valuations to each of these options, the computer will select one of them at random.

Once a single option has finally been picked out in this process, you will draw a number from the bag of 100 discs. You will be paid the sum of money specified in the option if the number is in the winning range for that option. Otherwise, you get nothing. Discs are replaced after each draw so everyone faces a draw from a full set of numbers from 1 to 100. At the end of the experiment, anyone who would like to is welcome to check that the bags really do contain numbers from 1 to 100.

So, to sum up: you will perform 18 tasks. Your responses will have no impact on which pair of options is selected at the end of the experiment, but they will have an impact on which of the pair you face for real. This means that it is in your interests to answer all of the questions carefully and honestly. Any questions? OK, we are ready to start the experiment proper. Press <enter> and you will see Task 1. Respond to each task in your own time: there is no time limit. Raise your hand if you need assistance.