

Supplement to “Eliciting risk preferences using choice lists”

(*Quantitative Economics*, Vol. 10, No. 1, January 2019, 217–237)

DAVID J. FREEMAN

Department of Economics, Simon Fraser University

YORAM HALEVY

Department of Economics, University of Toronto

TERRI KNEELAND

Department of Economics, University College London

APPENDIX A: EXPERIMENTAL DETAILS

Our online experiment was composed of two components: the mTurk interface used to recruit and pay subjects and an external experiment website where subjects made their choice decisions.

Using the mTurk interface, we (as the recruiter) released an ad for a task (“HIT” for Human Intelligence Task) which could be viewed by online workers (turkers). All turkers that satisfy the required criteria can view a description of the HIT (in our case, we required turkers to have a US based account and a completion record of 95% or greater). Our HIT description was a short description of the experiment that included a unique HIT passcode along with a link to our experiment webpage, which was hosted on a private server. Turkers could either accept or decline the HIT once they read the description. If a turker accepted the HIT, he would click on the link to the external experiment website and enter his unique mTurk identifier and the HIT passcode. The passcode was unique per HIT and one-time use. The passcode would expire after the turker completed the experiment. This prevented a turker from completing the HIT multiple times. Figure 1 provides an example of one of our HIT descriptions.

Once subjects logged into the external experiment website, they consented to the experiment, read the instructions, answered a short quiz to indicate understanding, made their choices, and were then informed of their bonus payment (determined by a random number computer generator) and received a unique completion code. Subjects then entered the completion code back in the HIT page in the mTurk interface to complete the HIT. Figures 2 and 3 provide a set of example instructions and questions from treatment L1, and Figure 4 shows the question in treatment P1. Instructions and questions from other treatments were similar.

David J. Freeman: david_freeman@sfu.ca

Yoram Halevy: yoram.halevy@utoronto.ca

Terri Kneeland: t.kneeland@ucl.ac.uk

Description:

This HIT asks you to make a series of choices among alternatives that involve monetary prizes. The HIT should take between 5-10 minutes to complete. Your answers will be used in an academic study on decision-making.

Please click the link below to begin the HIT. Please enter your mTurk Worker ID and the following mTurk HIT ID where prompted in order to begin the survey.

mTurk HIT ID: \${pw}

When you are finished, you will receive a Completion Code that you must enter in the box below to receive credit for participation.

Completion Code:

Please do not take this HIT if you are not willing to commit 10 minutes of your full concentration to the HIT. The data we collect is being used for scientific research. We greatly appreciate your full attention and careful consideration of each question.

Note: Any versions of this HIT can only be taken once by each worker. If you complete this HIT more than once, you will only be paid for the first time. [Click here for list of workers who have completed a version of this HIT.](#)

*Note: Javascript is required for this HIT

Please accept the HIT before you begin!

[CLICK HERE TO BEGIN HIT](#)

FIGURE 1. Mechanical Turk HIT description.

Subjects were linked in our dataset (that contained the choice and payment data) to the mTurk site by both their mTurk identifier and their completion code. This allowed us to match a turker's account with his payment information recorded in our dataset, and pay the turker accordingly.

Subjects were paid a flat rate payment for completing the HIT and earned a "bonus" based on their choices. In our experiment, the payment corresponded to the show-up fee and the bonus corresponded to the incentivized payment. Payments must be set equal for all turkers who complete a HIT in the same batch, but bonuses may differ. Both payments and bonuses are at the recruiters discretion, thus turkers do not need to be paid unless they complete the task. We offered a payment of \$1 for completing the HIT, and a bonus of \$0, \$3, or \$4 corresponding to the risky outcomes in our lotteries. Bonuses depended upon the element of chance described in the RIS, the lotteries and the subject's choices. All payments were in American dollars. Subjects completed the experiment (HIT) by submitting a completion code generated by our website to the mTurk interface. A random number generator was used to resolve all risks automatically, and subjects were informed of how much of a bonus would be paid after completing the study. Payments were credited to subjects' mTurk accounts within 30 minutes of completing the experiment.

A recruiter can recruit n subjects for an experiment by releasing a "batch" with n HITS. These tasks can be identical or individualized by the inputs in a csv file. We used

Instructions

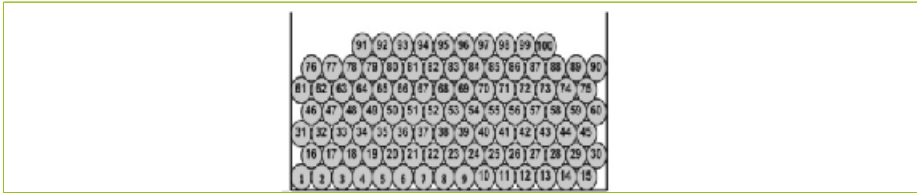
You will be paid \$1 for completing this HIT. When you have finished, you will be given an ID number. You must copy that ID number into the Mechanical Turk HIT page and submit the HIT in order to receive payment.

In addition, you will receive a BONUS payment. You will be asked to answer one question in which you make a series of choices between two options (Option A and Option B). Your bonus payment will be determined by your choices in this question.

Options A and B will consist of a monetary payment (either 3 or 4 dollars) to be paid with some random chance.

The random chance is determined by a stated number X which is between 1 and 100 and a numbered ball drawn from a box. The box contains 100 balls numbered 1 to 100. If the number on the ball drawn is less than or equal to the stated number X , then the random draw is successful.

For example, one Option may be: "\$4 if the number on the ball drawn is less than or equal to 50." This means, that if the number on the ball drawn is less than or equal to 50, you receive \$4 as your Bonus payment. If the number on the ball drawn is greater than 50, you will not receive a bonus payment.



The box contains 100 balls numbered 1 to 100. Each number is in the box exactly once. Each number is equally likely to be drawn.

To ensure you understand the instructions, please answer the following quiz. You must successfully complete the quiz before you may continue.

Quiz

Scroll your mouse over the boxes below to select your answers. Your selected answer will be highlighted in yellow.

- A ball is drawn from a box containing 100 balls numbered 1 to 100 as described above.

(a) The ball with the number 11 has the same chance of being drawn as the ball with the number 85?	True	False
<hr/>		
(b) Which is more likely?	The ball drawn has a number less than or equal to 90	The ball drawn has a number less than or equal to 20
<hr/>		
(c) Which is more likely?	The ball drawn has a number less than or equal to 40	The ball drawn has a number less than or equal to 60
- Suppose you choose the Option "\$4 if the number on the ball chosen is less than or equal to 50."

(a) What is your bonus if the ball drawn is numbered 32?	\$0	\$4
(b) What is your bonus if the ball drawn is numbered 69?	\$0	\$4
(c) What is your bonus if the ball drawn is numbered 50?	\$0	\$4

You may continue when you have completed the Quiz

Continue

FIGURE 2. Instructions for treatment L1.

individualized tasks differentiated by unique HIT passcodes. A batch with n HITs recruits n different subjects. However, different batches of HITs could potentially be completed by the same subjects who completed HITs in different batches. The mTurk interface has no method to block turkers who have completed a HIT in a previous batch from completing future HITs. Our external experimental interface prevented this by blocking such subjects by matching entered mTurk identifiers with a list of those who had previously completed a HIT (this list was automatically updated each time a turker completed a HIT). We also built in a secondary feature to ensure subject uniqueness by recording a

Question 1

For each line below, please choose whether you prefer Option A or Option B.

Your bonus will be determined by your choice (Option A or Option B) from a randomly selected line. Each choice could be the one that counts, so you should treat each and every line as if that choice will determine your bonus payment.

A number will be drawn from a box containing 100 balls numbered 1-100 as described in the instructions. If the number on the ball drawn is less than or equal to the number indicated in the question, then you will be paid according to your choice in the selected line.

For example, in the second line below: Option A is \$3 if the number on the ball drawn is less than or equal to 100. Option B is \$4 if the number on the ball drawn is less than or equal to 98. If you choose Option A, then you would be paid \$3. If you choose Option B, then you would be paid \$4 if the number on the ball drawn is less than or equal to 98.

Scroll your mouse over the boxes below to choose your preferred option. Your selected choice will be highlighted in yellow. Please select either Option A or Option B in each line.

	Option A	Option B
Line #	\$3 if the number on the ball drawn is less than or equal to:	\$4 if the number on the ball drawn is less than or equal to:
1	100	100
2	100	98
3	100	96
4	100	94
5	100	92
6	100	90
7	100	88
8	100	86
9	100	84
10	100	82
11	100	80
12	100	78
13	100	76
14	100	74
15	100	72
16	100	70
17	100	68
18	100	66
19	100	64
20	100	62
21	100	60
22	100	58
23	100	56
24	100	54
25	100	52
26	100	50

When you have made all of your choices please press 'Continue'

Continue

FIGURE 3. List for treatment L1.

Do not use the BACK or REFRESH Buttons

Question 1

Please choose whether you prefer Option A or Option B.

Your bonus will be determined by your choice (Option A or Option B). A number will be drawn from a box containing 100 balls numbered 1-100 as described in the instructions.

Option A is \$3 if the number on the ball drawn is less than or equal to 100. Option B is \$4 if the number on the ball drawn is less than or equal to 80. If you choose Option A, then you would be paid \$3. If you choose Option B, then you would be paid \$4 if the number on the ball drawn is less than or equal to 80.

Click in the box below to choose your preferred option. Your selected choice will be highlighted in yellow.

	Option A	Option B
selected	\$3 if the number on the ball drawn is less than or equal to 100	\$4 if the number on the ball drawn is less than or equal to 80

When you have made your choice please press 'Continue'

Continue

FIGURE 4. Pairwise choice for treatment P1.

subject's IP address when he completed a HIT. We could then cross-check the list of IP addresses to ensure that the same IP address did not appear for multiple subjects.

APPENDIX B: REVIEW OF EXPERIMENTS ON MECHANICAL TURK

As a large online labor market, mTurk provides a convenient way to recruit and pay subjects over the internet. It allows researchers to economize on costs and experiment on a different population from undergraduates, and has been advocated as a platform for recruiting subjects by psychologists studying judgement and decision-making (Mason and Suri (2012), Paolacci, Chandler, and Ipeirotis (2010), Buhrmester, Kwang, and Gosling (2011)), political scientists (Berinsky, Huber, and Lenz (2012)), and economists (Horton, Rand, and Zeckhauser (2011)). A potential downside of running experiments on mTurk is that subjects complete the experiment from their home computer, and not in a controlled lab environment, making it difficult to know for sure who the subjects really are and how much attention they are paying to the tasks. Paolacci, Chandler, and Ipeirotis (2010) found that the population of US-based turkers who participate in experiments is heterogeneous and is more representative of the US population than typical undergraduate samples, and that turkers pay as much attention to experimental tasks as undergraduates in a lab. Paolacci, Chandler, and Ipeirotis (2010) and Horton, Rand, and Zeckhauser (2011) showed that some standard experimental results in the judgement and decision-making literature can be qualitatively and quantitatively replicated using turkers.

REFERENCES

- Berinsky, A., G. Huber, and G. Lenz (2012), “Evaluating online labor markets for experimental research: Amazon.com’s Mechanical Turk.” *Political Analysis*, 20 (3), 351–368. [5]
- Buhrmester, M., T. Kwang, and S. Gosling (2011), “Amazon’s Mechanical Turk: A new source of inexpensive, yet high-quality, data?” *Perspectives on Psychological Science*, 6 (1), 3–5. [5]
- Horton, J., D. Rand, and R. Zeckhauser (2011), “The online laboratory: Conducting experiments in a real labor market.” *Experimental Economics*, 14 (3), 399–425. [5]
- Mason, W. and S. Suri (2012), “Conducting behavioral research on Amazon’s Mechanical Turk.” *Behavior Research Methods*, 44 (1), 1–23. [5]
- Paolacci, G., J. Chandler, and P. Ipeirotis (2010), “Running experiments on Amazon Mechanical Turk.” *Judgment and Decision Making*, 5 (5), 411–419. [5]

Co-editor Peter Arcidiacono handled this manuscript.

Manuscript received 20 March, 2017; final version accepted 16 April, 2018; available online 1 May, 2018.