

# Supplementary Materials: Inequality of Opportunity and Income Redistribution\*

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## Contents

<b>A Experiment Procedure</b>	<b>3</b>
A.1 Spectator Survey . . . . .	3
A.1.1 Informed Consent Page . . . . .	3
A.1.2 Background Information Page . . . . .	4
A.1.3 Comprehension Question 1 . . . . .	8
A.1.4 Comprehension Question 2 . . . . .	12
A.1.5 Comprehension Question 3 . . . . .	16
A.1.6 Comprehension Question 4 . . . . .	20
A.1.7 Redistribution Task . . . . .	23
A.1.8 Exit Questions . . . . .	28
A.2 Worker Survey . . . . .	31
A.2.1 Online Consent Form . . . . .	31
A.2.2 Instructions . . . . .	32
A.2.3 Comprehension Questions . . . . .	35
A.2.4 Lucky Opportunities Score Multiplier . . . . .	43
A.2.5 Encryption Task . . . . .	44
A.2.6 Rules-After Instructions . . . . .	46
A.2.7 Demographic Questions . . . . .	47
A.2.8 Effort Belief Questions . . . . .	52
A.2.9 Completion Page . . . . .	54

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<b>B Questions from Luck Perception Survey</b>	<b>55</b>
B.1 Open-Ended Important Luck Events . . . . .	55
B.2 Likert-Type Importance of Various Luck Events . . . . .	55

## A Experiment Procedure

This section provides screenshots of the spectator and worker surveys. Each subsection presents a distinct web-page for the participant (without a back button). Note, images are *not* exhaustive for all treatments; samples of each spectator treatment are provided to compare similarities and differences. We designed all experimental programs in oTree (Chen et al., 2016).

### A.1 Spectator Survey

#### A.1.1 Informed Consent Page

Figure 1: Informed Consent for All Spectators

#### Welcome!

This survey is about making real decisions concerning real workers that recently completed a task online. You will be asked to make decisions that will influence the earnings of these workers. Taking part is voluntary and you may end your participation at any time. The data captured do not include any of your personally identifiable information; your anonymity will be maintained throughout.

This survey is being conducted for the purposes of academic research and the principal investigator is Professor Marcel Preuss of Cornell University (mp2222@cornell.edu), who you may reach out to for questions specific to the research study. Your completion of this survey is your implied consent that your anonymized responses will be used for research.

[Proceed to Study](#)

### A.1.2 Background Information Page

Information on this web-page is revealed in interactive stages. Participants click the bottom-left question button to reveal more information.

Figure 2: “Important Background Information” (All Spectators)

## Important Background Information

*We are interested in people's opinions about income redistribution for workers in settings where both **chance** and **effort** determine their outcomes. Please read all information carefully. It will be important for your responses to this survey.*

[Tell me about the workers' task?](#)

Figure 3: “Tell me about the workers’ task?” (All Spectators)

A few days ago, US-based workers were recruited via an online marketplace. They were randomly matched to compete against each other in a task, which determined their earnings. Their task was to encrypt as many 3-letter words as possible in 5 minutes. Below is an example of one encryption.

L	Z	C	M	Q	P	V	D	B	U	R	K	N
411	550	492	673	422	995	693	933	957	663	955	149	369
F	O	Y	J	G	W	A	I	T	H	E	S	X
940	975	774	560	215	461	527	226	178	322	270	988	483

Please translate the following word into code:

VOY:

[How was the winner determined?](#)

Figure 4: “How was the winner determined?” (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

The winner was determined sometimes by **chance** (using a coin flip) and sometimes by **performance** (number of correct encryptions). For each pair of workers, there was some probability between **0%** and **100%** that a coin flip decided the winner.

**Example**

If the coin-flip probability is 35% for a worker pair, then there is a:

- 35% chance that we pick the winner by tossing a coin.
- 65% chance that we pick the winner comparing which worker correctly encrypted more words.

**What did workers know and when?**

---

The winner was determined by whoever had the highest score. Each worker's score was the **number of correct encryptions** they completed *times* their **multiplier**. Each worker's multiplier was a randomly assigned number between **1.0** and **4.0**.

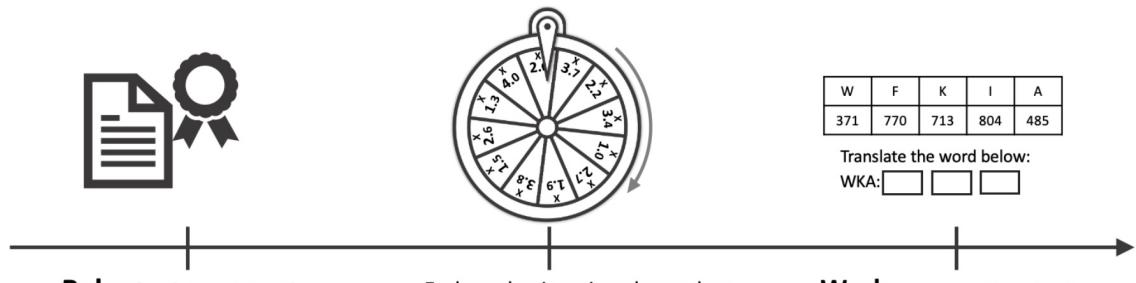
**Example**

A worker completed 20 encryptions correctly. If they received a

- multiplier of **1.5**, then they scored  $1.5 \times 20 = 30$ .
- multiplier of **2.5**, then they scored  $2.5 \times 20 = 50$ .

**What did workers know and when?**

Figure 5: “How was the winner determined?” (Top: Lucky Opportunities Rules-Before, Bottom: Lucky Opportunities Rules-After)

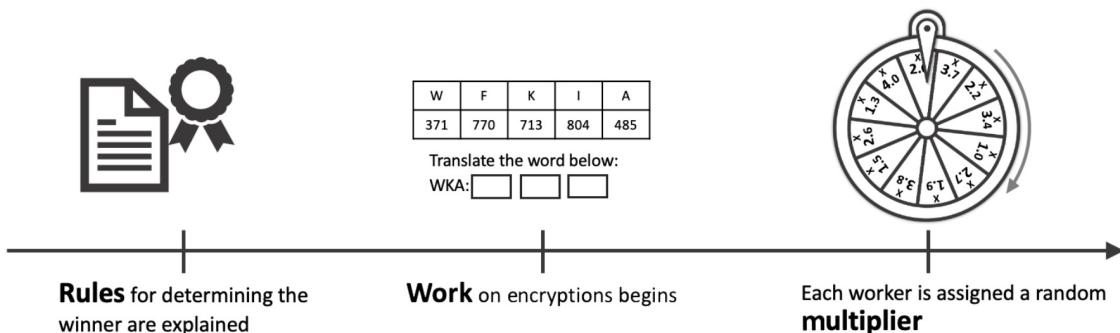


#### Notice

- Workers were told how the winner would be determined **before** working on the task.
- Each worker also learned about their multiplier **before** they started working on encryptions.

*The next screens will test your comprehension of the above information. Once you answer all questions correctly, you can proceed to information about your task in this study.*

[I'm ready to test my comprehension](#)



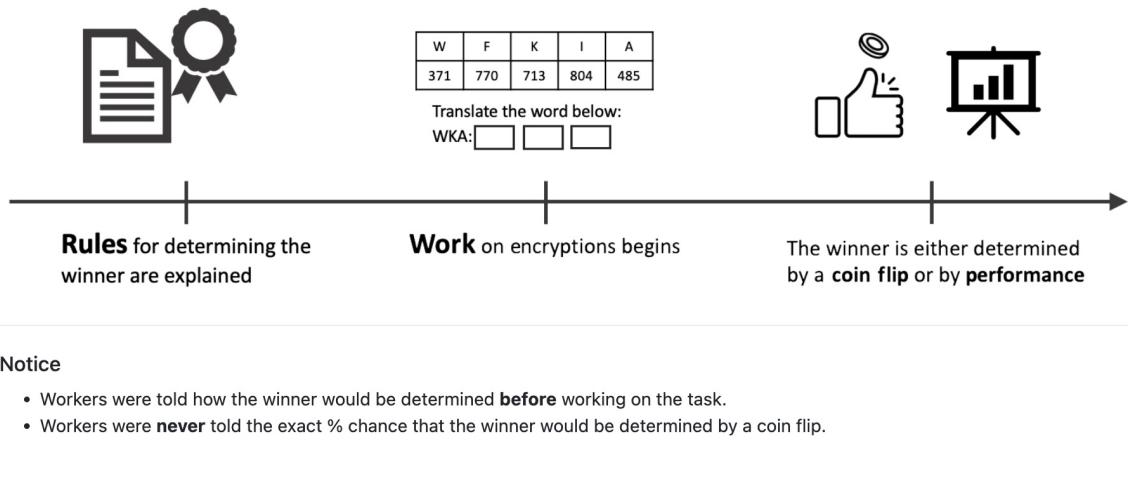
#### Notice

- Workers were told how the winner would be determined **before** working on the task.
- Each worker also learned about their multiplier **after** they finished working on encryptions.

*The next screens will test your comprehension of the above information. Once you answer all questions correctly, you can proceed to information about your task in this study.*

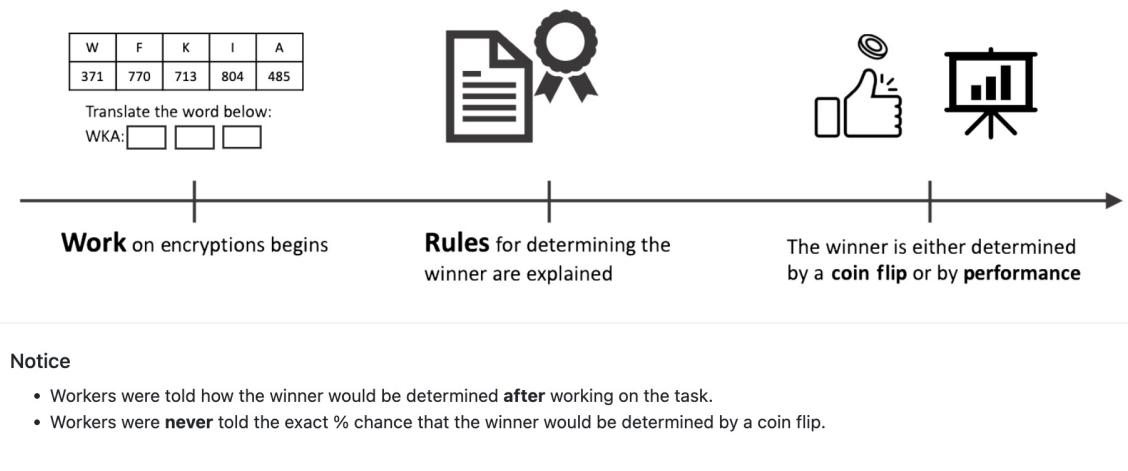
[I'm ready to test my comprehension](#)

Figure 6: “How was the winner determined?” (Top: Lucky Outcomes Rules-Before, Bottom: Lucky Outcomes Rules-After)



*The next screens will test your comprehension of the above information. Once you answer all questions correctly, you can proceed to information about your task in this study.*

[I'm ready to test my comprehension](#)



*The next screens will test your comprehension of the above information. Once you answer all questions correctly, you can proceed to information about your task in this study.*

[I'm ready to test my comprehension](#)

### A.1.3 Comprehension Question 1

Figure 7: Comprehension Question 1 (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

## Question 1 of 4

Consider two hypothetical players that have been randomly matched: Alice and Bob.

Worker:	Alice	Bob
Correct Encryptions:	22	12
Coin-Flip Chance:		20%
Result:	won	lost
Unadjusted Earnings:	\$5	\$0

How was the winner determined in this example?

- It could have been by a coin flip or by performance
- By a coin flip
- By performance

[Remind me how the winner was determined?](#)

[Submit My Answer](#)

---

## Question 1 of 4

Consider two hypothetical players that have been randomly matched: Alice and Bob.

Worker:	Alice	Bob
Correct Encryptions:	22	12
Multiplier:	2.0	1.5
Result:	??	??
Unadjusted Earnings:	??	??

Who is the winner in this example?

- Alice
- It's a tie
- Bob

[Remind me how the winner was determined?](#)

[Submit My Answer](#)

Figure 8: Hint for Comprehension Question 1 (Lucky Opportunities)

## Question 1 of 4

Consider two hypothetical players that have been randomly matched: Alice and Bob.

Worker:	Alice	Bob
<b>Correct Encryptions:</b>	22	12
<b>Multiplier:</b>	2.0	1.5
<b>Result:</b>	??	??
<b>Unadjusted Earnings:</b>	??	??

Who is the winner in this example?

- Alice
- It's a tie
- Bob

[Remind me how the winner was determined?](#)

[Submit My Answer](#)

The winner was determined by whoever had the highest score. Each worker's score was the **number of correct encryptions** they completed **times** their **multiplier**. Each worker's multiplier was a randomly assigned number between **1.0** and **4.0**.

### Example

A worker completed 20 encryptions correctly. If they received a

- multiplier of **1.5**, then they scored **1.5 × 20 = 30**.
- multiplier of **2.5**, then they scored **2.5 × 20 = 50**.

Figure 9: Incorrect Submission for Comprehension Question 1 (Lucky Outcomes)

## Question 1 of 4

Incorrect. Please try again.

Consider two hypothetical players that have been randomly matched: Alice and Bob.

Worker:	Alice	Bob
Correct Encryptions:	22	12
Coin-Flip Chance:	20%	
Result:	won	lost
Unadjusted Earnings:	\$5	\$0

How was the winner determined in this example?

- It could have been by a coin flip or by performance
- By a coin flip
- By performance

[Remind me how the winner was determined?](#)

[Submit My Answer](#)

Figure 10: Correct Submission for Comprehension Question 1 (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

## Question 1 of 4

You selected "It could have been by a coin flip or by performance". That's correct! Please review the answer below.

<b>Worker:</b>	Alice	Bob
<b>Correct Encryptions:</b>	22	12
<b>Coin-Flip Chance:</b>		20%
<b>Result:</b>	won	lost
<b>Unadjusted Earnings:</b>	\$5	\$0

There are two ways that Alice could have won:

- By performance (80% chance): Alice could have won because she correctly solved more encryptions than Bob: 22 versus 12.
- By a coin flip (20% chance): Alice could have won the coin toss.

Therefore, we cannot be sure why Alice won.

[Continue](#)

---

## Question 1 of 4

You selected "Alice". That's correct! Please review the answer below.

<b>Worker:</b>	Alice	Bob
<b>Correct Encryptions:</b>	22	12
<b>Multiplier:</b>	2.0	1.5
<b>Result:</b>	won	lost
<b>Unadjusted Earnings:</b>	\$5	\$0

- Alice correctly encrypted 22 words and has a multiplier of **2.0**, so her final score is  **$2.0 \times 22 = 44$** .
- Bob correctly encrypted 12 words and has a multiplier of **1.5**, so his final score is  **$1.5 \times 12 = 18$** .

Alice has the higher final score and is therefore the winner. Alice earns **\$5** and Bob earns **\$0**.

[Continue](#)

#### A.1.4 Comprehension Question 2

Figure 11: Comprehension Question 2 (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

### Question 2 of 4

Next, consider two other hypothetical players that have been randomly matched: Charlie and Diana.

Worker:	Charlie	Diana
Correct Encryptions:	15	20
Coin-Flip Chance:		85%
Result:	won	lost
Unadjusted Earnings:	\$5	\$0

How was the winner determined in this example?

- By a coin flip
- By performance
- It could have been by a coin flip or by performance

Remind me how the winner was determined?

**Submit My Answer**

---

### Question 2 of 4

Next, consider two other hypothetical players that have been randomly matched: Charlie and Diana.

Worker:	Charlie	Diana
Correct Encryptions:	15	20
Multiplier:	3.0	2.0
Result:	??	??
Unadjusted Earnings:	??	??

Who is winner in this example?

- Charlie
- Diana
- It's a tie

Remind me how the winner was determined?

**Submit My Answer**

Figure 12: Hint for Comprehension Question 2 (Lucky Outcomes)

## Question 2 of 4

Next, consider two other hypothetical players that have been randomly matched: Charlie and Diana.

Worker:	Charlie	Diana
Correct Encryptions:	15	20
Coin-Flip Chance:		85%
Result:	won	lost
Unadjusted Earnings:	\$5	\$0

How was the winner determined in this example?

- By a coin flip
- By performance
- It could have been by a coin flip or by performance

Remind me how the winner was determined?

**Submit My Answer**

The winner was determined sometimes by **chance** (using a coin flip) and sometimes by **performance** (number of correct encryptions). For each pair of workers, there was some probability between **0%** and **100%** that a coin flip decided the winner.

### Example

If the coin-flip probability is 35% for a worker pair, then there is a:

- 35% chance that we pick the winner by tossing a coin.
- 65% chance that we pick the winner comparing which worker correctly encrypted more words.

Figure 13: Incorrect Submission for Comprehension Question 2 (Lucky Opportunities)

## Question 2 of 4

Incorrect. Please try again.

Next, consider two other hypothetical players that have been randomly matched: Charlie and Diana.

Worker:	Charlie	Diana
Correct Encryptions:	15	20
Multiplier:	3.0	2.0
Result:	??	??
Unadjusted Earnings:	??	??

Who is winner in this example?

- Charlie
- Diana
- It's a tie

[Remind me how the winner was determined?](#)

[Submit My Answer](#)

Figure 14: Correct Submission for Comprehension Question 2 (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

## Question 2 of 4

You selected "By a coin flip". That's correct!

<b>Worker:</b>	Charlie	Diana
<b>Correct Encryptions:</b>	15	20
<b>Coin-Flip Chance:</b>		85%
<b>Result:</b>	won	lost
<b>Unadjusted Earnings:</b>	\$5	\$0

Consider the two possible ways that the winner could have been determined:

- By performance (15% chance): Diana would have won because she correctly solved more encryptions than Charlie: 20 versus 15.
- By a coin flip (85% chance): Charlie or Diana could have won the coin toss.

Therefore, Charlie must have won by a coin toss.

[Continue](#)

## Question 2 of 4

You selected "Charlie". That's correct!

<b>Worker:</b>	Charlie	Diana
<b>Correct Encryptions:</b>	15	20
<b>Multiplier:</b>	3.0	2.0
<b>Result:</b>	won	lost
<b>Unadjusted Earnings:</b>	\$5	\$0

- Charlie correctly encrypted 15 words and has a multiplier of 3.0, so his final score is  $3.0 \times 15 = 45$ .
- Diana correctly encrypted 20 words and has a multiplier of 2.0, so her final score is  $2.0 \times 20 = 40$ .

Charlie has the higher final score and is therefore the winner. Charlie earns \$5 and Diana earns \$0.

[Continue](#)

### A.1.5 Comprehension Question 3

Figure 15: Comprehension Question 3 (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

#### Question 3 of 4

When did workers know the probability (e.g., exact % chance) that a coin flip would determine the winner and loser?

- Never
- After working on the task
- Before working on the task

---

#### Question 3 of 4

When did workers know what their individual score multiplier was?

- After working on the task
- Before working on the task
- Never

Figure 16: Hint for Comprehension Question 2 (Lucky Outcomes Rules-Before)

### Question 3 of 4

When did workers know the probability (e.g., exact % chance) that a coin flip would determine the winner and loser?

- After working on the task
- Never
- Before working on the task

Remind me what did workers know and when?

Submit My Answer



W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



Rules for determining the  
winner are explained

Work on encryptions begins

The winner is either determined  
by a coin flip or by performance

#### Notice

- Workers were told how the winner would be determined **before** working on the task.
- Workers were **never** told the exact % chance that the winner would be determined by a coin flip.

Figure 17: Correct Submission for Comprehension Question 3 for Lucky Outcomes Treatment (Top: Rules-Before, Bottom: Rules-After)

### Question 3 of 4

You selected "Never". That's correct!



W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



Rules for determining the winner are explained

Work on encryptions begins

The winner is either determined by a coin flip or by performance

Workers learned that there is some chance that a coin flip determines who wins. However, workers never learn the exact probability and don't know if a coin flip is actually used.

Continue

### Question 3 of 4

You selected "Never". That's correct!

W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



Work on encryptions begins

Rules for determining the winner are explained

The winner is either determined by a coin flip or by performance

Workers learned that there is some chance that a coin flip determines who wins. However, workers never learn the exact probability and don't know if a coin flip is actually used.

Continue

Figure 18: Correct Submission for Comprehension Question 3 for Lucky Opportunities Rules-BeforeTreatment (Top: Ex-Ante, Bottom: Ex-Post)

### Question 3 of 4

You selected "Before working on the task". That's correct!



**Rules** for determining the winner are explained



Each worker is assigned a random **multiplier**

W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:

**Work** on encryptions begins

Workers knew their individual multiplier **before** working on the task.

**Continue**

### Question 3 of 4

You selected "After working on the task". That's correct!



**Rules** for determining the winner are explained

W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



**Work** on encryptions begins

Each worker is assigned a random **multiplier**

Workers knew their individual multiplier **after** working on the task.

**Continue**

#### A.1.6 Comprehension Question 4

Figure 19: Comprehension Question 4 (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

### Question 4 of 4

When did workers learn the rules about how there's some chance a coin flip might determine who wins?

- Never
- After working on the task
- Before working on the task

Remind me what did workers know and when?

Submit My Answer

---

### Question 4 of 4

When did workers learn the rules about how the multipliers might affect who wins?

- Never
- After working on the task
- Before working on the task

Remind me what did workers know and when?

Submit My Answer

Figure 20: Hint for Comprehension Question 4 (Lucky Outcomes Rules-After)

## Question 4 of 4

When did workers learn the rules about how there's some chance a coin flip might determine who wins?

- Never
- After working on the task
- Before working on the task

Remind me what did workers know and when?

[Submit My Answer](#)

W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



Work on encryptions begins

Rules for determining the  
winner are explained

The winner is either determined  
by a coin flip or by performance

### Notice

- Workers were told how the winner would be determined **after** working on the task.
- Workers were **never** told the exact % chance that the winner would be determined by a coin flip.

Figure 21: Correct Submission for Comprehension Question 4 for Lucky OutcomesTreatment (Top: Rules-Before, Bottom: Rules-After)

## Question 4 of 4

You selected "Before working on the task". That's correct!



W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



Rules for determining the winner are explained

Work on encryptions begins

The winner is either determined by a coin flip or by performance

Workers learned about how there is a chance that a coin flip determines who wins before working on the task.

Continue

## Question 4 of 4

You selected "After working on the task". That's correct!

W	F	K	I	A
371	770	713	804	485

Translate the word below:  
WKA:



Work on encryptions begins

Rules for determining the winner are explained

The winner is either determined by a coin flip or by performance

Workers learned about how there is a chance that a coin flip determines who wins after working on the task.

Continue

### A.1.7 Redistribution Task

Figure 22: “Worker Earnings and Your Task” (Top: Lucky Outcomes, Bottom: Lucky Opportunities)

## Worker Earnings and Your Task

*Like the examples in the comprehension questions, sometimes the winner was the worker who performed better, and sometimes the worker who performed worse won because a coin flip determined the winner.*

Your task will be to decide whether to redistribute the earnings of 12 different pairs of **real workers**. However, unlike the examples on the previous screen, you will not know how many encryptions each worker completed.

[Learn more about workers' earnings](#)

---

## Worker Earnings and Your Task

*Like the examples in the comprehension questions, sometimes the winner was the worker who performed better, and sometimes the worker who performed worse won because they received a large enough multiplier.*

Your task will be to decide whether to redistribute the earnings of 12 different pairs of **real workers**. However, unlike the examples on the previous screen, you will not know how many encryptions each worker completed.

[Learn more about workers' earnings](#)

### Figure 23: “Learn more about workers’ earnings”

Your task will be to decide whether to redistribute the earnings of 12 different pairs of **real workers**. However, unlike the examples on the previous screen, you will not know how many encryptions each worker completed.

To start, we will assign the winner **\$5.00** and the loser **\$0.00** for each real pair of workers. Your task is to decide whether to **adjust these earnings**.

#### Note

- Workers will *never* know if they won—they will only learn their final earnings.
- They know an anonymous person will influence the final payments—you are that person!

[Will my decisions actually matter?](#)

### Figure 24: “Will my decisions actually matter?”

- They know an anonymous person will influence the final payments—you are that person!

We will randomly select **one** of your 12 decisions and implement it for real. Therefore, each of your 12 decisions has a chance to impact real people. In addition to the earnings that you decide on, all workers receive \$2.00 for participating in this study.

[I'm ready to make decisions on workers' earnings](#)

Figure 25: Spectator Redistribution Decision (Top: Lucky Outcomes , Bottom: Lucky Outcomes Info)

## Decision 1 of 12

<b>Worker ID:</b>	2ze6uhbq eiwi0n6n
<b>Coin-Flip Chance:</b>	62%
<b>Result:</b>	lost      won
<b>Unadjusted Earnings:</b>	\$0      \$5

There was a **62%** chance that the winner and the loser in this pair was determined by a **coin flip** instead of the number of correct encryptions each worker completed.

### Do you want to change their earnings?

Please choose the final, adjusted earnings for the above workers.

<b>Change:</b>	<b>No</b>	<b>Yes</b>									
		\$5.00	\$4.50	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	\$1.50	\$1.00	\$0.50
Pay <b>winner:</b>	\$0.00	\$0.50	\$1.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	\$4.50	\$5.00
Select one:	<input type="radio"/>										

Submit decision

## Decision 1 of 12

<b>Worker ID:</b>	4ko92q53 x7pq50ut
<b>Coin-Flip Chance:</b>	4%
<b>Result:</b>	won      lost
<b>Unadjusted Earnings:</b>	\$5      \$0

There was a **4%** chance that the winner and the loser in this pair was determined by a **coin flip** instead of the number of correct encryptions each worker completed.

This means that there is a **98%** chance that the winner above completed more encryptions than the loser.

### Do you want to change their earnings?

Please choose the final, adjusted earnings for the above workers.

<b>Change:</b>	<b>No</b>	<b>Yes</b>									
		\$5.00	\$4.50	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	\$1.50	\$1.00	\$0.50
Pay <b>winner:</b>	\$0.00	\$0.50	\$1.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	\$4.50	\$5.00
Select one:	<input type="radio"/>										

Submit decision

Figure 26: Spectator Redistribution Decision (Top: Lucky Opportunities , Bottom: Lucky Opportunities Info)

## Decision 1 of 12

<b>Worker ID:</b>	1m81elod	dz3e5o0u
<b>Multiplier:</b>	1.9	2.3
<b>Result:</b>	lost	won
<b>Unadjusted Earnings:</b>	\$0	\$5

*Remember: The winner had a **higher score** than the loser. Each worker's score is the number of correct **encryptions** they completed times their **multiplier**.*

### Do you want to change their earnings?

Please choose the final, adjusted earnings for the above workers.

Change:	No	Yes									
		\$5.00	\$4.50	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	\$1.50	\$1.00	\$0.50
Pay <b>winner</b> :	\$0.00	\$0.50	\$1.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	\$4.50	\$5.00
Pay <b>loser</b> :	\$5.00	\$4.50	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	\$1.50	\$1.00	\$0.50	\$0.00
Select one:	<input type="radio"/>										

Submit decision

## Decision 1 of 12

<b>Worker ID:</b>	hcv82lvj	xlrb31hy
<b>Multiplier:</b>	2.4	1.3
<b>Result:</b>	won	lost
<b>Unadjusted Earnings:</b>	\$5	\$0

*Remember: The winner had a **higher score** than the loser. Each worker's score is the number of correct **encryptions** they completed times their **multiplier**.*

Based on historical data for these multipliers, there is a **55%** chance that the winner above completed more encryptions than the loser.

### Do you want to change their earnings?

Please choose the final, adjusted earnings for the above workers.

Change:	No	Yes									
		\$5.00	\$4.50	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	\$1.50	\$1.00	\$0.50
Pay <b>winner</b> :	\$0.00	\$0.50	\$1.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	\$4.50	\$5.00
Pay <b>loser</b> :	\$5.00	\$4.50	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	\$1.50	\$1.00	\$0.50	\$0.00
Select one:	<input type="radio"/>										

Submit decision

Figure 27: Spectator Redistribution Submission Confirmation (Between Rounds)

## Decision 1 Submitted

Thank you, your response was recorded. When you are ready, please continue to the next decision.

[Continue to next decision](#)

### A.1.8 Exit Questions

Figure 28: Part 1 of the Exit Survey (Lucky Outcomes)

## Exit Survey: Page 1 of 2

*Thank you for completing the decisions. Please answer the following exit questions.*

### Question 1

Worker ID:	A	B
Coin-Flip Chance:	56%	
Result:	lost	won
Unadjusted Earnings:	\$0	\$5

There was a **56%** chance that the winner and the loser in this pair was determined by a **coin flip** instead of the number of correct encryptions each worker completed.

Suppose there are 100 pairs of workers with the same situation as the table above. That is, where the workers had a 56% chance of having a coin flip determine the winner and loser (instead of their performance).

In how many of those pairs do you think the winner completed more encryptions than the loser?

Enter a number between 0 and 100.

### Question 2

How many encryptions do you think workers solved on average?

Enter a number greater than or equal to 0.

### Question 3

If you knew for sure which worker solved more encryptions, how much would you allocate to that worker?

 ----- ▾

### Question 4

Please indicate if you used a mobile device to complete this survey:

No     Yes

**Continue**

Figure 29: Part 1 of the Exit Survey (Lucky Opportunities)

## Exit Survey: Page 1 of 2

*Thank you for completing the decisions. Please answer the following exit questions.*

### Question 1

Worker ID:	A	B
Multiplier:	1.2	4.0
Result:	lost	won
Unadjusted Earnings:	\$0	\$5

*Remember: The winner had a **higher score** than the loser. Each worker's score is the number of correct **encryptions** they completed times their **multiplier**.*

Suppose there are 100 pairs of workers with the same situation as the table above. That is, where the worker with a multiplier of **1.2** lost and the worker with a multiplier of **4.0** won.

In how many of those pairs do you think the winner completed more encryptions than the loser?

Enter a number between 0 and 100.

### Question 2

How many encryptions do you think a worker with a multiplier of **1.1** solved on average?

Enter a number greater than or equal to 0.

### Question 3

If you knew for sure which worker solved more encryptions, how much would you allocate to that worker?

 ----- ▾

Figure 30: Part 2 of the Exit Survey

## Exit Survey: Page 2 of 2

Please indicate your level of agreement or disagreement with the following statements:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
In the long run, hard work usually brings a better life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hard work doesn't generally bring success—it's more a matter of luck and connections.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The government should redistribute income only to eliminate income differences that are due to differences in luck.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The government should never redistribute income, regardless of the source of income differences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is fair if luck influences a person's income.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is fair if hard work influences a person's income.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to social issues, I am very conservative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I oppose government interventions in matters concerning the economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The income distribution in the US is fair.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is fair if connections influence a person's income.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is fair if talent influences a person's income.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to side with Democrats on most issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Select disagree if you are reading this.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to side with Republicans on most issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the US, people hold the key to economic success in their own hands.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The government should redistribute income to eliminate all income differences, regardless of whether they are mostly due to differences in luck, effort, or other factors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 31: Completion Page

## End of Survey

Thank you for taking part in this study.

Your \$5 Amazon Gift Card will be emailed to you within 3 business days.

## A.2 Worker Survey

### A.2.1 Online Consent Form

Figure 32: Online Consent for All Workers

#### Welcome!

This survey is part of a research project being led by Prof. Marcel Preuss, Germán Reyes, and Joy Wu at Cornell University, and Dr. Jason Somerville at the New York Federal Reserve.

**Purpose:** The purpose of the research project is to measure worker performance on a translation task.

**Procedures:** You will be asked to translate three-letter "words" into numeric codes for 5 minutes.

**Participant Requirements:** Participation in this study is limited to individuals aged 18 and older.

**Risks:** The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life or during other online activities.

**Benefits:** There is no personal benefit from your participation in the study, but the knowledge obtained by researchers may be of value to humanity.

**Compensation:** You will receive a fixed payment of \$2.00 *today* for completing this 10 minute survey. You may receive an additional payment of up to \$5.00 (avg. \$2.50) depending on your performance on the task. Bonus payments will be deposited to your MTurk account by **April 18**.

**Confidentiality:** The data captured for the research do not include any of your personally identifiable information. Your IP address will not be captured.

**Sharing De-identified Information:** De-identified data from this study may be shared with the research community at large to advance science and health. We will remove or code any personal information that could identify you before files are shared with other researchers to ensure that, by current scientific standards and known methods, no one will be able to identify you from the information we share. Despite these measures, we cannot guarantee anonymity of your personal data.

**Right to Ask Questions and Contact Information:** The main researcher conducting this study is Joy Wu, a graduate student at Cornell University. If you have questions, you may contact zw369@cornell.edu. If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Cornell Institutional Review Board (IRB) for Human Participants at 607-255-5138 or access their website at <http://www.irb.cornell.edu>. You may also report your concerns or complaints anonymously through Ethicspoint online at [www.hotline.cornell.edu](http://www.hotline.cornell.edu) or by calling toll free at 1-866-293-3077. Ethicspoint is an independent organization that serves as a liaison between the University and the person bringing the complaint so that anonymity can be ensured.

**Voluntary Participation:** Your participation in this research is voluntary. You may discontinue participation at any time.

I am aged 18 or older.

Yes  No

I have read and understand the information above.

Yes  No

I want to participate in this research and continue with the survey.

Yes  No

**Proceed to Study**

Figure 33: Not Eligible Workers

## Not Eligible

Based on your responses, you are not eligible to take part in this study.

Thank you for your consideration and we hope that you will participate in future surveys.

### A.2.2 Instructions

Figure 34: Instructions (All Workers)

## Instructions

This screen provides instructions about what the survey entails. It is very important that you understand how it works, so please read all instructions carefully. Not only will this allow us to collect more precise data, it will also help you to maximize your payment for participating.

[Learn about the task](#)

Figure 35: “Learn About the Task” (All Workers)

### What is the task?

**Your task is to translate three-letter "words" into numerical code.** Simply enter the three-digit code for each letter in the boxes next to the word. You will complete as many word translations as you can within **5 minutes**. We will measure your performance based on the number of words you correctly translate.

A sample task with a correct code is presented below:

M	P	G	R	J	S	Z	W
314	109	718	918	222	101	364	883

Please translate the following word into code:

PWG:

[Does my performance matter?](#)

Figure 36: “Does My Performance Matter?” (All Workers)

### Does my performance matter?

**Yes, it does!** You will compete against one other *real*, anonymous person in this study. Your performance at the translation task will influence whether you win against your opponent. In general, the more words you correctly translate the more likely you are to win the competition and earn bonus money of up to **\$5.00** in addition to your participation payment of **\$2.00**.

[How exactly is the winner determined?](#)

Figure 37: “How Exactly is the Winner Determined?” (Top: Lucky Outcomes or Lucky Opportunities-Ex-Post, Rules-After; Bottom: Lucky Outcomes, Rules-Before)

### How exactly is the winner determined?

We will provide full details on how the winner is determined once you complete the translation task.

**Bottom line:** *To maximize your chances of receiving a bonus payment, complete as many word translations as you can in 5 minutes.*

[Take Comprehension Quiz](#)

---

### How exactly is the winner determined?

Your final score will be the total number of translations that you accurately complete. We will determine the winner in one of following two ways:

1. By **Performance:** We will compare your final score to your competitor's final score; whoever has the highest score will win. If scores are tied, we will randomly match you with another opponent.
2. By **Chance:** We will determine the winner by a virtual **coin flip**. We will *not* compare your final score to your competitor's final score; you will have a 50-50 chance of winning.

**Bottom line:** *To maximize your chances of receiving a bonus payment, complete as many word translations as you can in 5 minutes.*

[Take Comprehension Quiz](#)

Figure 38: “How Exactly is the Winner Determined?” (Rules-Before; Middle: Lucky Opportunities-Ex-Ante, Bottom: Lucky Opportunities-Ex-Post)

### How exactly is the winner determined?

**Before** you start the translation task, you will randomly draw a score **multiplier** ranging between **1.0X** and **4.0X**. Your final score will be your total number of correctly translated words times your multiplier.

For example: if your multiplier is **1.5X** and you correctly translate 10 words, then you earn  $1.5 \times 10 = 15$  points.

We will compare your final score to your opponent's final score; whoever has the highest score will win the competition. If scores are tied, we will randomly re-match you with another competitor.

**Bottom line:** *To maximize your chances of receiving a bonus payment, complete as many word translations as you can in 5 minutes.*

[Take Comprehension Quiz](#)

---

### How exactly is the winner determined?

**After** you finish the translation task, you will randomly draw a score **multiplier** ranging between **1.0X** and **4.0X**. Your final score will be your total number of correctly translated words times your multiplier.

For example: if your multiplier is **1.5X** and you correctly translate 10 words, then you earn  $1.5 \times 10 = 15$  points.

We will compare your final score to your opponent's final score; whoever has the highest score will win the competition. If scores are tied, we will randomly re-match you with another competitor.

**Bottom line:** *To maximize your chances of receiving a bonus payment, complete as many word translations as you can in 5 minutes.*

[Take Comprehension Quiz](#)

### A.2.3 Comprehension Questions

Figure 39: Comprehension Questions Start Page (All Workers)

#### Check Your Comprehension

The next screen will test your comprehension of the instructions. Once you answer **all** questions correctly, you can proceed to the translation task.

[Continue](#)

Figure 40: Comprehension Questions (Lucky Outcomes or Lucky Opportunities-Ex-Post, Rules-After)

## Check Your Comprehension

### Question 1

What is the task that you will complete today?

- Classifying images into categories.
- Translating letters into code.
- Solving math problems.

### Question 2

Who are you competing against in this task?

- A computer.
- A randomly chosen player.
- No one. My score is all that matters.
- The average of all other players.

### Question 3

What can you do to increase your chances of winning a bonus payment?

- Correctly translate as many words as possible.
- Nothing, it's pure chance.

### Question 4

If you attempt 20 translation tasks and complete 10 correct translations, what number determines your performance?

- 12
- 24
- 20
- 10

### Question 5

Consider the following hypothetical game played by Alice and Bob:

	Alice	Bob
Time limit (in minutes):	5	5
Number of attempted translations:	12	30
Number of correct translations:	10	20

Who had the better performance?

- Bob
- Alice

[Submit Answers](#)

Figure 41: Comprehension Questions (Lucky Outcomes, Rules-Before)

## Check Your Comprehension

### Question 1

What is the task that you will complete today?

- Solving math problems.
- Classifying images into categories.
- Translating letters into code.

### Question 2

Who are you competing against in this task?

- The average of all other players.
- A randomly chosen player.
- No one. My score is all that matters.
- A computer.

### Question 3

What can you do to increase your chances of winning a bonus payment?

- Nothing, it's pure chance.
- Correctly translate as many words as possible.

### Question 4

If you attempt 20 translation tasks and complete 10 correct translations, what is your final score?

- 10
- 24
- 12
- 20

### Question 5

Consider the following hypothetical game played by Alice and Bob:

	Alice	Bob
Time limit (in minutes):	5	5
Number of attempted translations:	12	30
Number of correct translations:	10	20

If the winner is *not* determined by a coinflip, who would win this game?

- Alice
- Bob

[Submit Answers](#)

Figure 42: Comprehension Questions (Lucky Opportunities, Rules-Before)  
**Check Your Comprehension**

### Question 1

What is the task that you will complete today?

- Solving math problems.
- Classifying images into categories.
- Translating letters into code.

### Question 2

Who are you competing against in this task?

- The average of all other players.
- A randomly chosen player.
- No one. My score is all that matters.
- A computer.

### Question 3

What can you do to increase your chances of winning a bonus payment?

- Nothing, it's pure chance.
- Correctly translate as many words as possible.

### Question 4

Suppose your score multiplier is **1.2X**. If you attempt 20 translation tasks and complete 10 correct translations, what is your final score?

- 10
- 24
- 12
- 20

### Question 5

Consider the following hypothetical game played by Alice and Bob:

	Alice	Bob
Time limit (in minutes):	5	5
Number of attempted translations:	12	30
Number of correct translations:	10	20
Multiplier:	<b>3.0X</b>	<b>1.0X</b>

Who would win this game?

- Alice
- Bob

**Submit Answers**

Figure 43: Comprehension Question Validation (Lucky Opportunities, Rules-Before)

## Check Your Comprehension

Please fix the errors in the form.

### Question 1

What is the task that you will complete today?

Incorrect. Please Try Again.

- Solving math problems.
- Classifying images into categories.
- Translating letters into code.

### Question 2

Who are you competing against in this task?

Incorrect. Please Try Again.

- The average of all other players.
- A randomly chosen player.
- No one. My score is all that matters.
- A computer.

### Question 3

What can you do to increase your chances of winning a bonus payment?

- Nothing, it's pure chance.
- Correctly translate as many words as possible.

### Question 4

Suppose your score multiplier is 1.2X. If you attempt 20 translation tasks and complete 10 correct translations, what is your final score?

- 10
- 24
- 12
- 20

### Question 5

Consider the following hypothetical game played by Alice and Bob:

	Alice	Bob
Time limit (in minutes):	5	5
Number of attempted translations:	12	30
Number of correct translations:	10	20
Multiplier:	<span style="background-color: yellow;">3.0X</span>	<span style="background-color: yellow;">1.0X</span>

Who would win this game?

- Alice
- Bob

[Submit Answers](#)

Figure 44: Comprehension Question Pass (Lucky Outcomes or Lucky Opportunities-Ex-Post, Rules-After)

## Check Your Comprehension

You passed the comprehension test!

Please review the explanations for the correct answers below:

### Question 1 Solution:

Your task in this study is to correctly answer as many word translations as possible within 5 minutes.

### Question 2 Solution:

You will be matched with one *real*, anonymous person in this study.

### Question 3 Solution:

The more tasks that you correctly solve today, the more likely you are to win a bonus payment of up to \$5.00.

### Question 4 Solution:

If you complete 10 correct translations, then your performance is determined by 10 correct translations.

### Question 5 Solution:

Since Alice completed 10 correct translations, her final score is 10. Since Bob completed 20 correct translations, his final score is 20. Bob had the better performance.

[Continue](#)

Figure 45: Comprehension Question Pass (Lucky Outcomes, Rules-Before)

## Check Your Comprehension

You passed the comprehension test!

Please review the explanations for the correct answers below:

### Question 1 Solution:

Your task in this study is to correctly answer as many word translations as possible within 5 minutes.

### Question 2 Solution:

You will be matched with one *real*, anonymous person in this study.

### Question 3 Solution:

The more tasks that you correctly solve today, the more likely you are to win a bonus payment of up to \$5.00.

### Question 4 Solution:

If you complete 10 correct translations, then your final score is 10.

### Question 5 Solution:

Since Alice completed 10 correct translations, her final score is 10. Since Bob completed 20 correct translations, his final score is 20. Bob is the winner of this game if the winner is *not* determined by a coinflip.

[Continue](#)

Figure 46: Comprehension Question Pass (Lucky Opportunities, Rules-Before)

## Check Your Comprehension

You passed the comprehension test!

Please review the explanations for the correct answers below:

### Question 1 Solution:

Your task in this study is to correctly answer as many word translations as possible within 5 minutes.

### Question 2 Solution:

You will be matched with one *real*, anonymous person in this study.

### Question 3 Solution:

The more tasks that you correctly solve today, the more likely you are to win a bonus payment of up to \$5.00.

### Question 4 Solution:

If you complete 10 correct translations, and your multiplier is **1.2X**, then your final score is  $1.2 \times 10 = 12$ .

### Question 5 Solution:

Since Alice completed 10 correct translations, and her multiplier is **3.0X**, her final score is  $3.0 \times 10 = 30$ . Since Bob completed 20 correct translations, and his multiplier is **1.0X**, his final score is  $1.0 \times 20 = 20$ . Alice is the winner of this game.

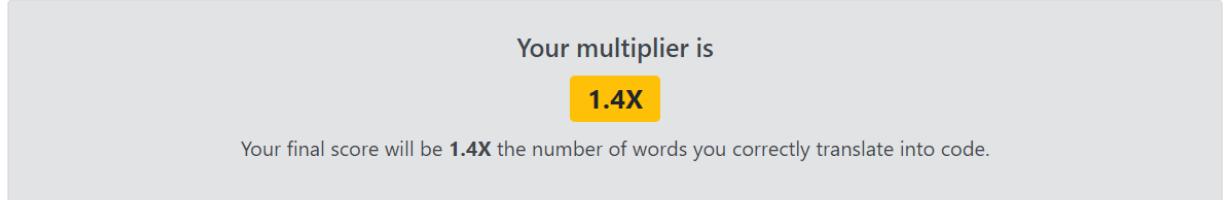
[Continue](#)

#### A.2.4 Lucky Opportunities Score Multiplier

Workers in the Lucky Opportunities-Ex-Ante condition are presented their individual multiplier directly after passing the comprehension questions. Workers in the Lucky Opportunities-Ex-Post condition are presented their individual multiplier directly after completing the encryption task.

Figure 47: Score Multiplier (Lucky Opportunities)

### Score Multiplier



### A.2.5 Encryption Task

Figure 48: Encryption Start Page (All Workers)

Ready?

**On the next page, your 5 minutes will start.** The total time you have remaining will be displayed at the top of the page.

After you have translated a three letter word, you must click **Next Word** to submit your translation and receive a new word. You won't receive any feedback on whether your translation had a mistake or was correct. You'll learn the number of accurately translated words after the task is completed.

**Please work continuously for the entire 5 minutes and make an honest attempt to correctly translate as many words as you can. Failure to do so may result in ineligibility.** When you are ready to begin, please click the start button below.

**Start Tasks**

Figure 49: Encryption Task (All Workers)

Word 1

Time left to complete the coding task: **4:56**

L	D	P	O	X	S	E	C	J	Z	F	Q	M
356	280	573	189	762	567	327	643	471	200	889	262	732
V	R	Y	U	A	B	W	T	K	G	N	I	H
496	741	743	914	557	653	782	363	655	153	752	946	682

Please translate the following word into code:

ZLH:

**Next Word**

Keep going! Make sure to click 'Next Word' for your code to get submitted and counted towards your score.

After 90 seconds of inactivity, subjects are “timed-out” of participating—see page displayed to subjects in Figure 50—due to not working “continuously for the entire 5 minutes” as stated prior to starting the encryption task (see Figure 48). Some encryption validations were included to constrain the subject into submitting three-digit, positive integers (see Figure 51).

Figure 50: Encryption Task Timed-Out (All Workers)

## Not Eligible

You have been timed out due to inactivity and are therefore not eligible to continue.

Figure 51: Encryption Task Validation (All Workers)

## Word 1

Time left to complete the coding task: **4:06**

L	D	P	O	X	S	E	C	J	Z	F	Q	M
356	280	573	189	762	567	327	643	471	200	889	262	732
V	R	Y	U	A	B	W	T	K	G	N	I	H
496	741	743	914	557	653	782	363	655	153	752	946	682

Please translate the following word into code:

ZLH:

! Please fill out this field.

**Next Word**

Keep going! Make sure to click 'Next Word' for your code to get submitted and counted towards your score.

### A.2.6 Rules-After Instructions

Workers in the Rules-After Lucky Outcomes and Lucky Opportunities-Ex-Post conditions are presented information about how the winner is determined after seeing their scores from completing the encryption task.

Figure 52: “How will we determine the winner?” (Rules-After; Top: Lucky Outcomes, Bottom: Lucky Opportunities-Ex-Post)

## How will we determine the winner?

Your final score will be the total number of translations that you accurately complete. We will determine the winner in one of following two ways:

1. By **Performance**: We will compare your final score to your competitor's final score; whoever has the highest score will win. If scores are tied, we will randomly match you with another opponent.
2. By **Chance**: We will determine the winner by a virtual **coin flip**. We will *not* compare your final score to your competitor's final score; you will have a 50-50 chance of winning.

[Continue](#)

---

## How will we determine the winner?

You will randomly draw a score **multiplier** ranging between **1.0X** and **4.0X**. Your final score will be your total number of correctly translated words times your multiplier.

For example: if your multiplier is **1.5X** and you correctly translate 10 words, then you earn  $1.5 \times 10 = 15$  points.

We will compare your final score to your opponent's final score; whoever has the highest score will win the competition. If scores are tied, we will randomly re-match you with another competitor.

[Continue](#)

#### A.2.7 Demographic Questions

Figure 53: Encryption Task Exit Page (All Workers)

### A Few Exit Questions

Before we reveal your completion code, please answer a few exit survey questions on the following pages. Some of these questions will include a chance to earn more bonus money.

Continue

Figure 54: Background Questions – Gender (All Workers)

### Some Background About You

On this screen, please answer a few survey questions. Your responses will NOT influence your earnings or your tournament.

Please select your gender.	<input type="button" value="-----"/>	<input type="button" value="Male"/>	<input type="button" value="Female"/>	<input type="button" value="Non-binary"/>	<input type="button" value="I prefer not to say"/>
Please enter your age.	<input type="text"/>				
Have you been granted the MTurk Masters Qualification?	<input type="checkbox"/>				
What is your marital status?	<input type="button" value="-----"/>				
What is your ethnicity?	<input type="button" value="-----"/>				
Please indicate the highest academic degree you have completed. If you are currently actively pursuing one, please select that academic degree.	<input type="button" value="-----"/>				
What is your household's annual income (before taxes)?	<input type="button" value="-----"/>				
How would you best describe your current employment or professional status?	<input type="button" value="-----"/>				
Do you have any general feedback about the survey?	<input type="text"/>				

Continue

Figure 55: Background Questions – Marital Status (All Workers)

## Some Background About You

On this screen, please answer a few survey questions. Your responses will NOT influence your earnings or your tournament.

Please select your gender.	-----
Please enter your age.	
Have you been granted the MTurk Masters Qualification?	<input type="radio"/> Yes <input type="radio"/> No
What is your marital status?	----- ----- Single, never married Married or domestic partnership Separated Divorced Widowed I prefer not to say
What is your ethnicity?	
Please indicate the highest academic degree you have completed. If you are currently actively pursuing one, please select that academic degree.	
What is your household's annual income (before taxes)?	-----
How would you best describe your current employment or professional status?	-----
Do you have any general feedback about the survey?	

[Continue](#)

Figure 56: Background Questions – Ethnicity (All Workers)

## Some Background About You

On this screen, please answer a few survey questions. Your responses will NOT influence your earnings or your tournament.

Please select your gender.	<input type="text" value="-----"/>
Please enter your age.	<input type="text" value=""/>
Have you been granted the MTurk Masters Qualification?	<input type="radio"/> Yes <input type="radio"/> No
What is your marital status?	<input type="text" value="-----"/>
What is your ethnicity?	<input type="text" value="-----"/> ----- Asian or Pacific Islander Black or African American Hispanic or Latino Native or Indigenous American White Other I prefer not to say
Please indicate the highest academic degree you have completed. If you are currently actively pursuing one, please select that academic degree.	<input type="text" value="-----"/>
What is your household's annual income (before taxes)?	<input type="text" value=""/>
How would you best describe your current employment or professional status?	<input type="text" value=""/>
Do you have any general feedback about the survey?	<input type="text" value=""/>

[Continue](#)

Figure 57: Background Questions – Education (All Workers)

## Some Background About You

On this screen, please answer a few survey questions. Your responses will NOT influence your earnings or your tournament.

Please select your gender.	-----
Please enter your age.	<input type="text"/>
Have you been granted the MTurk Masters Qualification?	<input type="radio"/> Yes <input type="radio"/> No
What is your marital status?	-----
What is your ethnicity?	-----
Please indicate the highest academic degree you have completed. If you are currently actively pursuing one, please select that academic degree.	----- ----- Some high school, no diploma High school graduate, diploma, or equivalent Some college, no degree Trade, technical, or vocational training Associate degree Bachelor degree Master degree MBA degree Professional degree PhD degree I prefer not to say
What is your household's annual income (before taxes)?	
How would you best describe your current employment or professional status?	
Do you have any general feedback about the survey?	

**Continue**

Figure 58: Background Questions – Income (All Workers)

## Some Background About You

On this screen, please answer a few survey questions. Your responses will NOT influence your earnings or your tournament.

Please select your gender.	-----
Please enter your age.	-----
Have you been granted the MTurk Masters Qualification?	<input type="radio"/> Yes <input type="radio"/> No
What is your marital status?	-----
What is your ethnicity?	-----
Please indicate the highest academic degree you have completed. If you are currently actively pursuing one, please select that academic degree.	-----
What is your household's annual income (before taxes)?	----- ----- Less than \$24,999 \$25,000 to \$49,999 \$50,000 to \$74,999 \$75,000 to \$99,999 \$100,000 to \$149,999 Greater than \$150,000 I prefer not to say
How would you best describe your current employment or professional status?	-----
Do you have any general feedback about the survey?	-----

**Continue**

### A.2.8 Effort Belief Questions

Figure 59: “Assess Your Work” (Lucky Outcomes)

## Assess Your Work

On this screen, please answer a few questions about how well you performed at the translation task.

### Question 1

On a scale of 0 to 100, how confident are you that you will win against your opponent?

0 is least confident, 100 is most confident.

### Question 2

Suppose that the winner was determined purely by performance (i.e., the number of correctly translated words). How would your effort have differed if there was *no* chance a coin flip determined the winner?

- Much more effort
- More effort
- About the same effort
- Less effort
- Much less effort

### Question 3

Guess correctly and earn \$0.10!

How many three-letter words do you think you correctly translated?

### Question 4

How many three-letter words do you think people in the study, on average, correctly translated?

Continue

Figure 60: “Assess Your Work” (Lucky Opportunities)

## Assess Your Work

On this screen, please answer a few questions about how well you performed at the translation task.

### Question 1

On a scale of 0 to 100, how confident are you that you will win against your opponent?

0 is least confident, 100 is most confident.

### Question 2

Suppose that the winner was determined purely by performance (i.e., the number of correctly translated words). How would your effort have differed if there was *no* multiplier for you or your opponent's scores?

- Much more effort
- More effort
- About the same effort
- Less effort
- Much less effort

### Question 3

**Guess correctly and earn \$0.10!**

How many three-letter words do you think you correctly translated?

### Question 4

How many three-letter words do you think people in the study, on average, correctly translated?

### Question 5

**Guess correctly and earn \$0.10!**

What was your multiplier?

### Question 6

What do you think was the average multiplier of people in the study?

**Continue**

### A.2.9 Completion Page

Figure 61: Survey Completion Page

## End of Survey

Thank you for taking part in this study.

Your unique completion code is:

**qTNDK7y2rH**

Your payment today is:

**Participation Fee** \$1.00

**Bonus Payment** \$0.00

**Total** \$1.00

Your future payment will be determined as follows:

We will randomly pair you with another participant who completed the same task. The payment you and the other participant will receive is based on a two-stage process.

**Stage 1:**

The winner is the person who had the highest score in the translation task. The winner earns \$6.00 while the other participant earns \$0.

**Stage 2:**

A randomly selected third person will be given the chance to redistribute earnings between you and your opponent. The third person will be informed of the basic rules of the game, but won't know your identity nor the identity of your opponent. This person will decide whether to redistribute earnings from the player who earned \$6.00 to the player who earned \$0. Based on the outcome of this stage, we will compute the final earnings of each player. We will deposit any additional earnings into your MTurk account after the third person's decision on the final earnings.

## B Questions from Luck Perception Survey

This section contains questions included in a February 2023 *Survey of Consumer Expectations* to complement the experiment and provide ecological validity to the perception that opportunities are important luck events that determine success.

### B.1 Open-Ended Important Luck Events

It is often said that luck is important for success in life. In your view, what are the three most important examples of luck in an individual's life?

[[Open-Ended Response (max 100 words)]]

### B.2 Likert-Type Importance of Various Luck Events

Circumstances beyond a person's control—or, their *luck*—can impact their life earnings. Please indicate on a scale from 1 to 5 how important you think the following factors are for determining people's life earnings:

- The family or society that you are born into
- Unforeseen events (e.g. financial crises or booms, natural disasters, good harvests)
- Access to education (e.g. quality of public schools in district)
- Unexpected windfalls (e.g. winning the lottery, inheritance)
- Your social and professional network
- Fortuitous encounters and coincidences (e.g. right place at the right time)
- Genetic makeup or natural ability

[[Note: 1 is “Not important,” 2 is “Slightly important,” 3 is “Fairly important,” 4 is “Important,” and 5 is “Very important.” Items are randomized in order.]]

## References

- Chen, D. L., M. Schonger, and C. Wickens (2016). otree—an open-source platform for laboratory, online, and field experiments. *Journal of Behavioral and Experimental Finance* 9, 88–97.