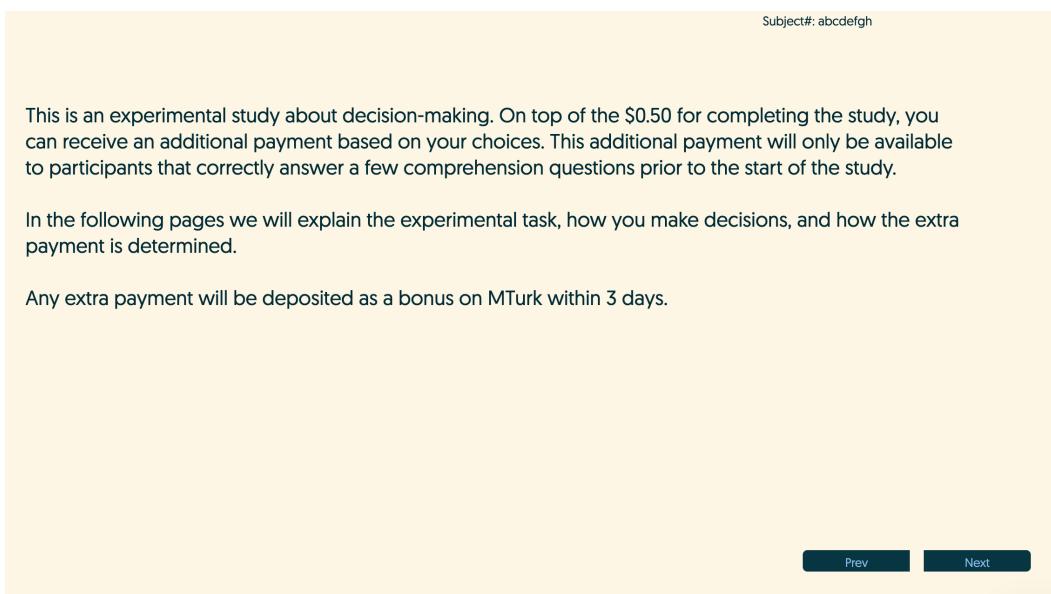


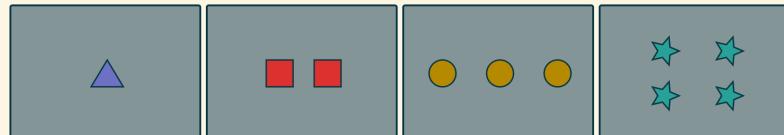
APPENDIX A. SCREENSHOTS AND INSTRUCTIONS

A.1. First Stage Experiments. Screenshots for first-stage experiments. Different states of the same stage are indicated by sub-captions.



The study will use cards containing a certain number [1, 2, 3, or 4] of a particular symbol (triangle, square, circle, or star) with a specific color (purple, orange, red, or blue). Considering all possible values for [number, symbol, color] we end up with a deck of $4 \times 4 \times 4 = 64$ unique cards.

As an example, four of those cards are shown below:

[Prev](#)[Next](#)

Even though the entire deck has 64 cards, during the experiment you will work with 12 cards at a time. Your goal is to use those 12 cards to form groups of 3 cards satisfying a simple property. Any combination of 3 cards satisfying that property is called a **SET**.

The property that defines a **SET** is this: A **SET** is any combination of 3 cards such that each attribute (number, symbol, and color) is either:

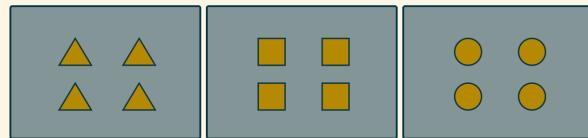
- the same for all three cards, or
- is different for each of the three cards.

The next few pages show examples of 3-card combinations that do and do not form a **SET**.

[Prev](#)[Next](#)

Example 1

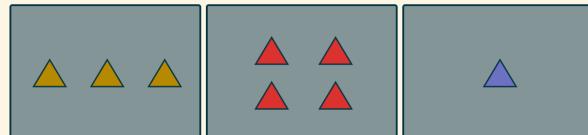
The following 3 cards form a **SET**:



That's because all cards have the same color (orange), the same number of symbols (4), and different symbols (from left to right: triangle, square, and circle).

[Prev](#)[Next](#)**Example 2**

The following 3 cards also form a **SET**:

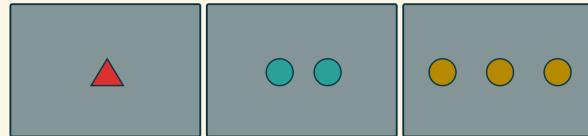


And that's because all cards have the same symbol (triangle), different colors (from left to right: orange, red, and blue), and different number of symbols (from left to right: 3, 4, and 1).

[Prev](#)[Next](#)

Example 3

The following 3 cards, on the other hand, do NOT form a SET:



Even though the middle and right-most cards have circles, the left-most card has a triangle. Hence, for the attribute symbol, the cards are neither all the same nor all different. Note that the cards are all different with respect to color and number.

[Prev](#)[Next](#)

There will be two rounds in the experiment, and in each round you will see a 12-card deck that was randomly selected from a larger list of 12-card decks. You will have 120 seconds to form SETs in each round. You can form a SET by clicking on the cards to select, and you can click a selected card to un-select it.

If you select 3 cards that form a SET, it will be registered on the right side of your screen. If you select 3 cards that do not form a SET, you will incur a 5-second penalty. And if you select the same SET more than once, you will also incur a 5-second penalty. Therefore, you should not randomly click on cards in the hopes of finding a SET.

[Prev](#)[Next](#)

Subject#: abcdefgh

Comprehension Questions and Payment

We'll now ask you a few comprehension questions. We'll show you five different combinations of 3 cards and ask you if they form a SET:

- If you get two or more questions wrong, the study ends and you receive \$0.50.
- If you answer all questions correctly, you'll receive \$0.50 for completing the study and an extra \$0.10 per valid SET you find during the experiment.

Prev

Next

Subject#: ACBDEFGH

			<input type="button" value="Set"/>	<input type="button" value="Not a Set"/>
			<input type="button" value="Set"/>	<input type="button" value="Not a Set"/>
			<input type="button" value="Set"/>	<input type="button" value="Not a Set"/>
			<input type="button" value="Set"/>	<input type="button" value="Not a Set"/>
			<input type="button" value="Set"/>	<input type="button" value="Not a Set"/>

CONTINUE

(A-1) Quiz stage with no answers

Subject#: ACBDEFGH

			<input style="background-color: #c0a020; color: black; border: none; padding: 2px 10px;" type="button" value="Set"/> <input style="background-color: #204080; color: white; border: none; padding: 2px 10px;" type="button" value="Not a Set"/>
			<input style="background-color: #c0a020; color: black; border: none; padding: 2px 10px;" type="button" value="Set"/> <input style="background-color: #204080; color: white; border: none; padding: 2px 10px;" type="button" value="Not a Set"/>
			<input style="background-color: #204080; color: white; border: none; padding: 2px 10px;" type="button" value="Set"/> <input style="background-color: #c0a020; color: black; border: none; padding: 2px 10px;" type="button" value="Not a Set"/>
			<input style="background-color: #c0a020; color: black; border: none; padding: 2px 10px;" type="button" value="Set"/> <input style="background-color: #204080; color: white; border: none; padding: 2px 10px;" type="button" value="Not a Set"/>
			<input style="background-color: #204080; color: white; border: none; padding: 2px 10px;" type="button" value="Set"/> <input style="background-color: #c0a020; color: black; border: none; padding: 2px 10px;" type="button" value="Not a Set"/>

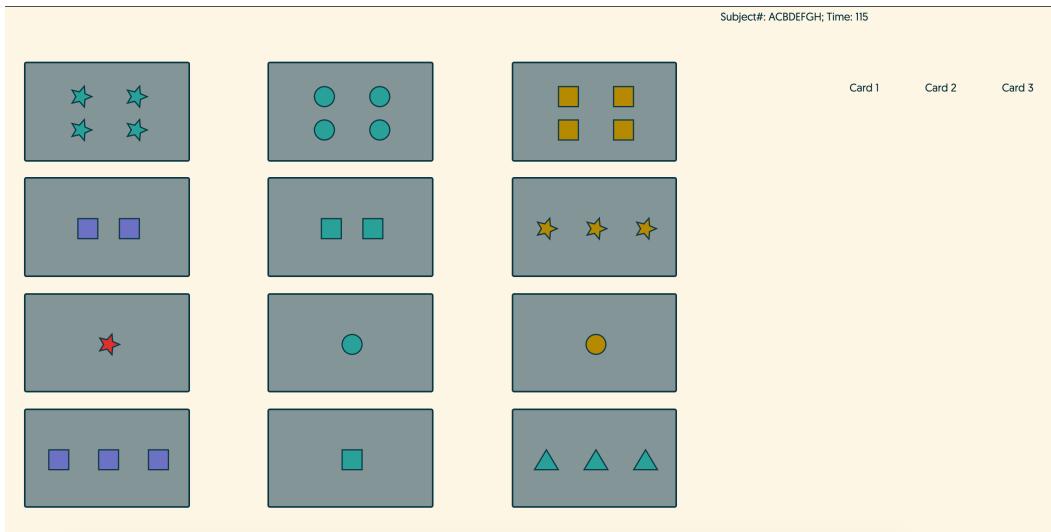
(A-2) Quiz stage with 4 correct answers

Congratulations! You passed the comprehension quiz and will now move on to the main part of the study.

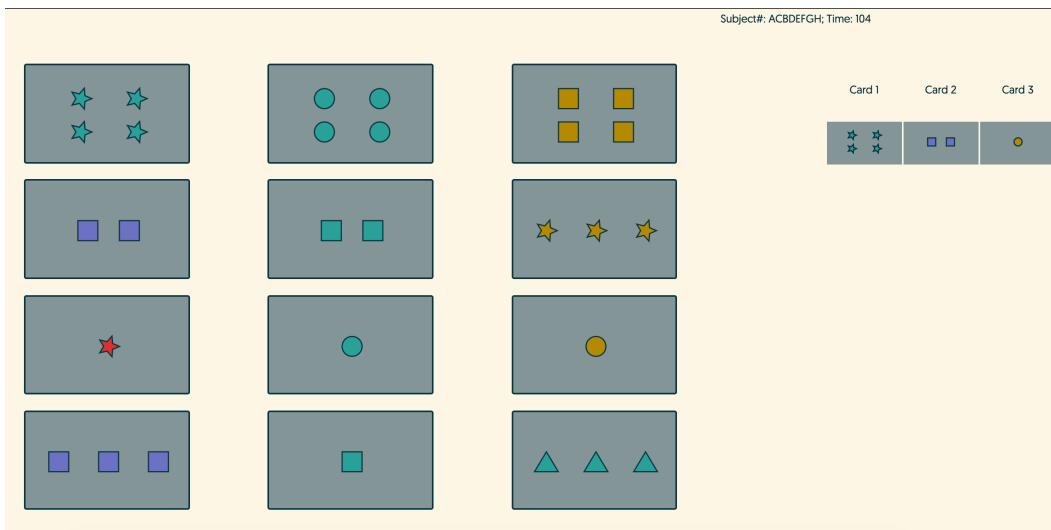
The study consists of 2 rounds and in each round you will have 120 seconds to form SETs. You will be paid an additional \$0.10 per correct SET. After 2 rounds, you'll be asked to complete a brief survey. Finally, you will receive your Mturk completion code.

Any extra amount you earn will be paid via a bonus on MTurk within 3 days.

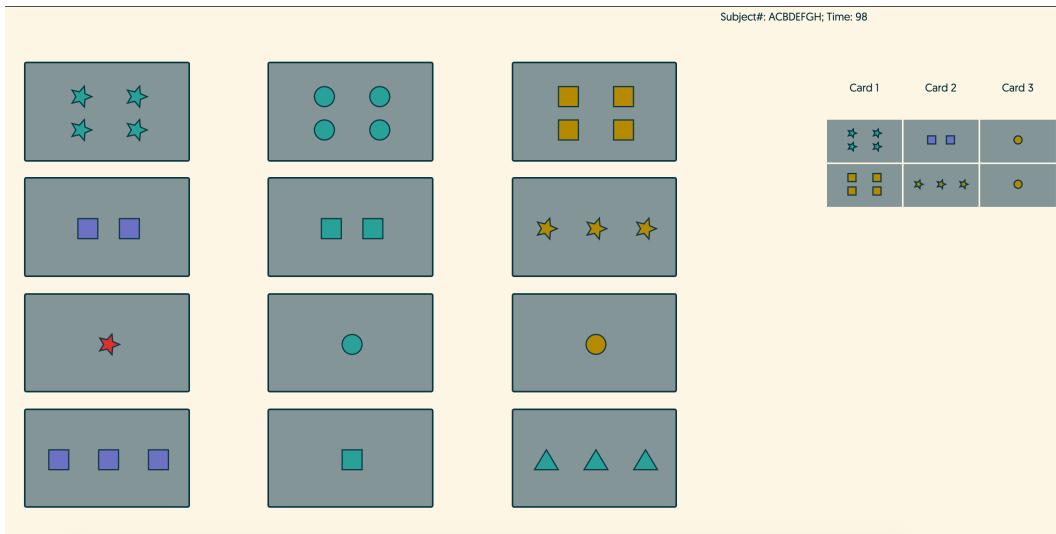
Click on the SUBMIT button to begin.



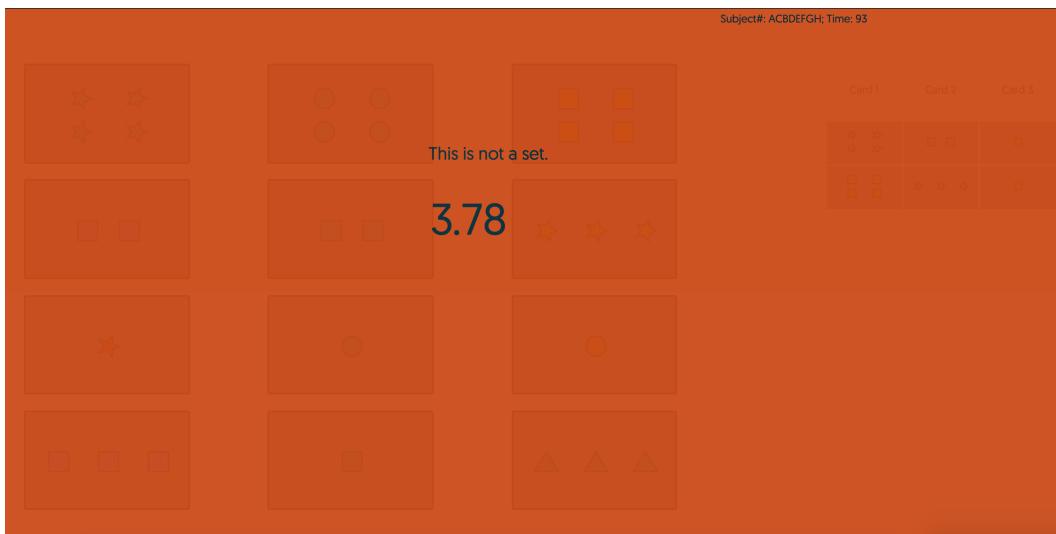
(B-1) Initial screen for round 1



(B-2) Screen indicating 1 set found



(B-3) Screen indicating 2 sets found



(B-4) Example of 5-second time penalty

Subject#: ACBDEFGH

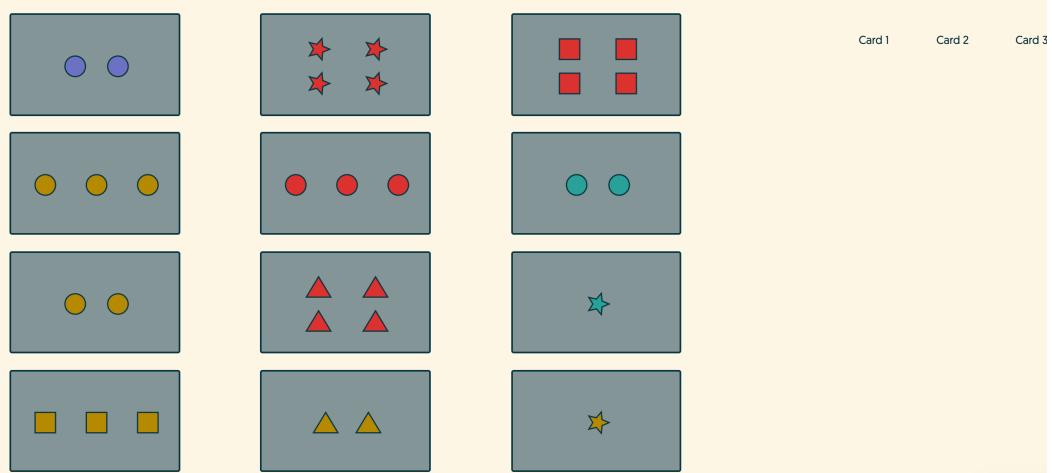
In the last round you found 2 SETs.

If you answer the following question within 5% of the true value, you will receive an additional \$0.50.

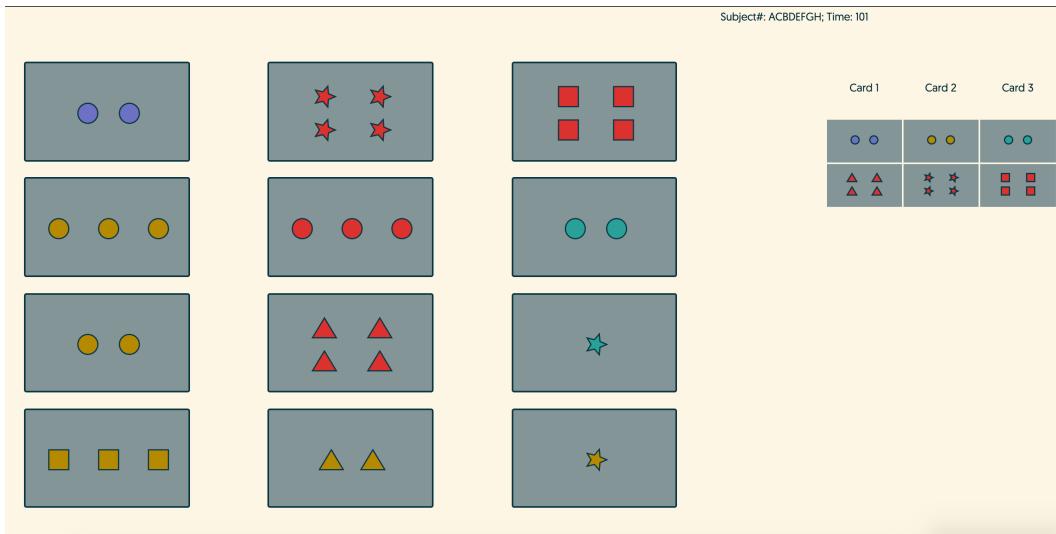
Of all possible SETs from the previous round, what percentage, from 0 to 100%, do you believe you found?: %

CONTINUE

Subject#: ACBDEFGH; Time: 115



(C-1) Initial screen for round 2



(C-2) Screen indicating 2 sets found

Subject#: ACBDEFGH

In the last round you found 2 SETs.

If you answer the following question within 5% of the true value, you will receive an additional \$0.50.

Of all possible SETs from the previous round, what percentage, from 0 to 100%, do you believe you found?: %

CONTINUE

Subject#: ACBDEFGH

Age: 18-30 31-45 46-65 65+

Gender: Female Male Other

Highest degree completed so far: High School Some College Bachelors Masters Ph.D.

CONTINUE

Thank you.
In round 1 you found 2 of 23 sets: 9%; your assessment was 60%.
In round 2 you found 2 of 23 sets: 9%; your assessment was 40%.
You received a survey bonus of \$0.00.

You total payment is \$0.90.

Please enter the following paycode on Amazon M-Turk:

81275996

A.2. Main Experiments. Screenshots for main experiments. Different states of the same stage — and different treatments — are indicated by sub-captions.

Subject#: AZCDGHz

Thanks for participating in our research!

This study is comprised of two short tasks. It's conducted by researchers at the University of Pittsburgh (USA) and Royal Holloway University (UK). Our goal is to learn more about decision-making. It should take around 8 minutes to complete.

Your participation is voluntary and your responses are anonymous. No one will be able to track your answers back to you. Please make sure to mark your Amazon Profile as private if you do not want to be identified from your worker ID.

Questions? Please contact Felipe A. Araujo at f.araujo@pitt.edu

Next

Subject#: AZCDGHz

This is an experimental study about decision-making. On top of the \$0.50 for completing the study, you can receive additional payments based on your choices. The additional payments will only be available to participants that correctly answer a few comprehension questions prior to the start of the study.

You will complete two tasks in today's experiment. In the next pages we'll give you details about Task 1. We will explain how you make decisions and how the payment for Task 1 is determined.

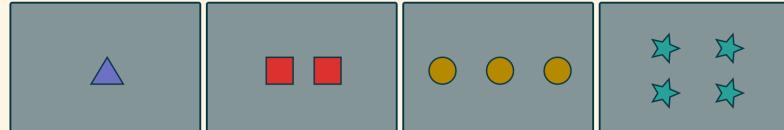
After Task 1 you will proceed to Task 2, where there is also a chance for an additional payment.

Any extra payment will be deposited as a bonus on MTurk within 5 days.

Prev Next

Task 1 will use cards containing a certain number [1, 2, 3, or 4] of a particular symbol {triangle, square, circle, or star} with a specific color {purple, orange, red, or blue}. Considering all possible values for [number, symbol, color] we end up with a deck of $4 \times 4 \times 4 = 64$ unique cards.

As an example, four of those cards are shown below:

[Prev](#)[Next](#)

Even though the entire deck has 64 cards, during Task 1 you will work with 12 cards. Your goal is to use those 12 cards to form groups of 3 cards satisfying a simple property. Any combination of 3 cards satisfying that property is called a **SET**.

The property that defines a **SET** is this: A **SET** is any combination of 3 cards such that each one of the attributes (number, symbol, and color) is either:

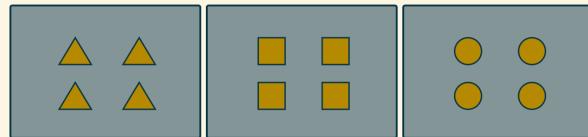
- the same for all three cards, or,
- is different for each of the three cards.

The next few pages show examples of 3-card combinations that do and do not form a **SET**.

[Prev](#)[Next](#)

Example 1

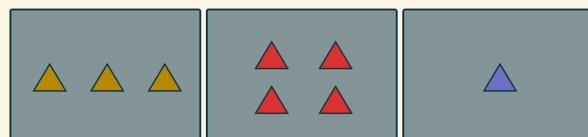
The following 3 cards form a **SET**:



That's because all cards have the same color (orange), the same number of symbols (4), and different symbols (from left to right: triangle, square, and circle).

[Prev](#)[Next](#)**Example 2**

The following 3 cards also form a **SET**:

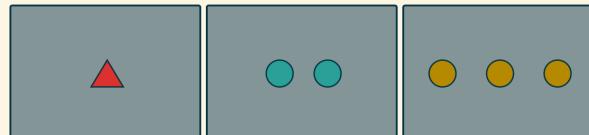


And that's because all cards have the same symbol (triangle), different colors (from left to right: orange, red, and blue), and different number of symbols (from left to right: 3, 4, and 1).

[Prev](#)[Next](#)

Example 3

The following 3 cards, on the other hand, do NOT form a SET:



Even though the middle and right-most cards have circles, the left-most card has a triangle. Hence, for the attribute symbol, the cards are neither all the same nor all different. Note that the cards are all different with respect to color and number.

[Prev](#)[Next](#)

On Task 1, you will see a 12-card deck that was randomly selected from a larger list of 12-card decks, and you will have 120 seconds to form SETs. You can form a SET by clicking on the cards to select, and you can click a selected card to un-select it.

If you select 3 cards that form a SET, it will be registered on the right side of your screen. If you select 3 cards that do not form a SET, you will incur a 5-second penalty. And if you select the same SET more than once, you will also incur a 5-second penalty. Therefore, you should not randomly click on cards in the hopes of finding a SET.

[Prev](#)[Next](#)

Comprehension Questions and Payment

We'll now ask you a few comprehension questions. We'll show you five different combinations of 3 cards and ask you if they form a **SET**:

- If you get two or more questions wrong, the study ends and you receive \$0.50.
- If you answer at least four of the five questions correctly, you'll receive \$0.50 for completing the study and an extra \$0.10 per valid **SET** you find during Task 1. Moreover, you will also have a chance for an additional payment on Task 2.

[Prev](#)[Next](#)

[Set](#) [Not a Set](#)



[Set](#) [Not a Set](#)



[Set](#) [Not a Set](#)

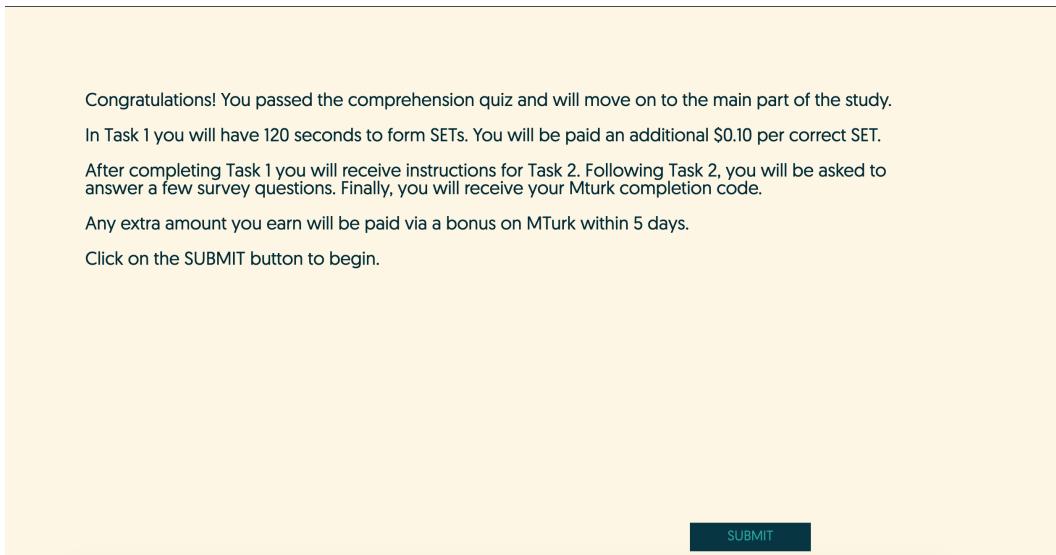


[Set](#) [Not a Set](#)

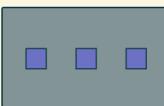
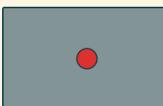


[Set](#) [Not a Set](#)

[CONTINUE](#)



You have found 1 of 28 sets.

			Card 1	Card 2	Card 3
					
					

(A-1) Treatment *full information*; 1 set found

Subject#: AZCDGH

In the last round you found 1 SETs.

Of all possible sets from the previous round, what percentage, from 0 to 100%, do you believe you found?
Please indicate your answer using the slider below:
??%

CONTINUE

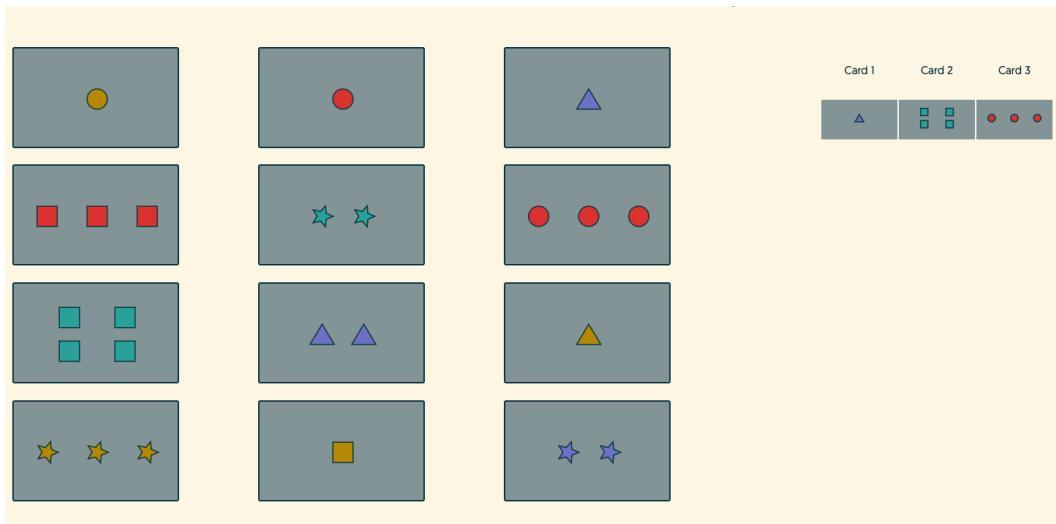
(A-2) Belief elicitation

You found 1 out of 28 sets.

★	□ □ □	△△	○ ○ ○	★	△△	□ □ □	★	△△	★ ★	□ □ □	△△
★ ★	●	△△	● ●	□ □ □	△△	○ ○ ○	●	△△	● ●	● ●	△△
□ □ □	●	△△	□ □ □	●	△△	□ □ □	● ●	△△	● ●	● ●	△△
△△	●	△△	★ ★	●	△△	●	● ●	△△	● ●	● ●	● ●
★ ★	●	● ●	●	●	● ●	●	● ●	● ●	● ●	● ●	● ●
○ ○ ○	△△	● ●	○ ○ ○	●	△△	○ ○ ○	△△	● ●	● ●	● ●	● ●
□ □ □	● ●	● ●	□ □ □	●	● ●	□ □ □	● ●	● ●	● ●	● ●	● ●

CONTINUE

(A-3) Treatment *full information*; feedback screen



(B-1) Treatment *unawareness*; 1 set found

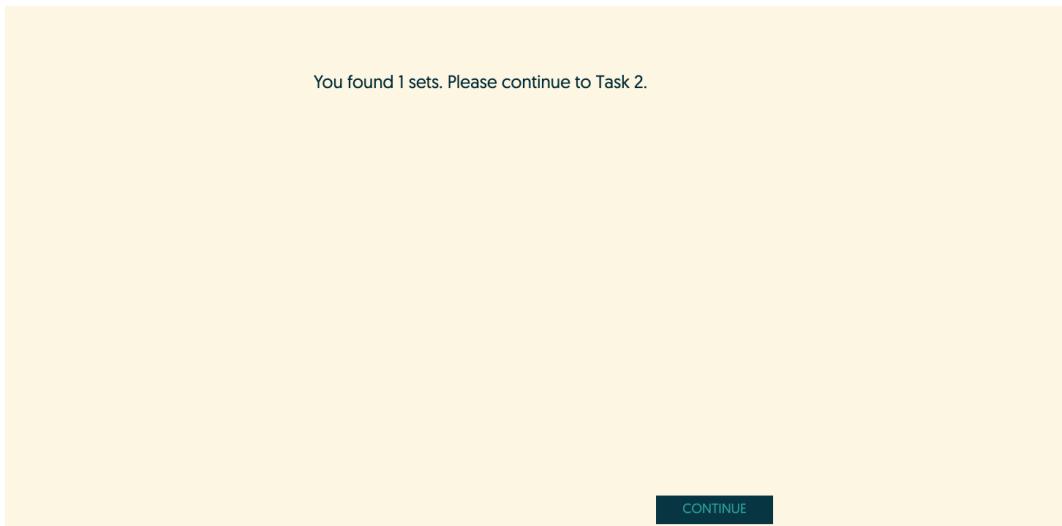
Subject#: AZCDGH

In the last round you found 1 SETs.

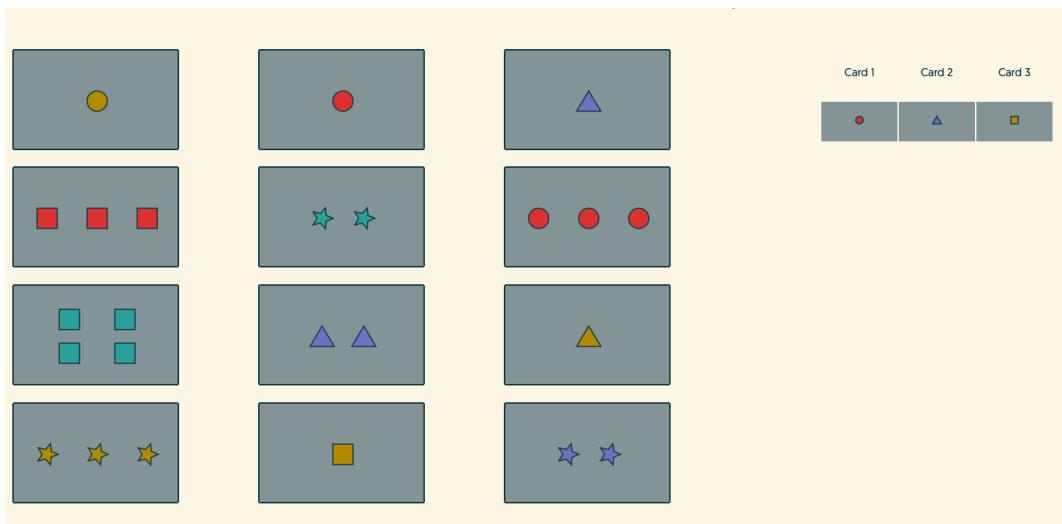
Of all possible sets from the previous round, what percentage, from 0 to 100%, do you believe you found?
 Please indicate your answer using the slider below:
 ??%

CONTINUE

(B-2) Belief elicitation



(B-3) Treatment *unawareness*; feedback screen



(C-1) Treatment *unawareness-info*; 1 set found

Subject#: AZCDGH

In the last round you found 1 SETs.

Of all possible sets from the previous round, what percentage, from 0 to 100%, do you believe you found?
Please indicate your answer using the slider below:
??%

CONTINUE

(C-2) Belief elicitation

You found 1 out of 28 sets.

■ ■ ■	●	★ ★	△ △	■ ■ ■	●	★ ★	■ ■ ■	●	●	● ● ●	★ ★	△ △	●	■ ■ ■
★ ★	●	●	▲	■ ■ ■	●	●	●	●	●	● ● ●	●	●	●	●
●	★ ★ ★	■ ■ ■	●	●	●	●	●	●	●	● ● ●	●	●	●	●
▲	● ● ●	★ ★	●	● ● ●	●	●	●	●	●	● ● ●	●	●	●	●
■ ■ ■	●	■ ■ ■	●	■ ■ ■	●	●	●	●	●	● ● ●	●	●	●	●
△ △	● ● ●	■ ■ ■	●	●	●	●	●	●	●	● ● ●	●	●	●	●
★ ★	● ● ●	▲	●	●	●	●	●	●	●	● ● ●	●	●	●	●

CONTINUE

(C-3) Treatment *unawareness-info*; feedback screen

Task 2

How does it work?

1. You just received an additional \$1.00 for passing the comprehension quiz
2. You must decide how much of this additional \$1.00 to keep safe and how much to bet in a lottery
3. You can bet any amount from \$0.00 to \$1.00

How do you earn money?

The amount of money you make will depend on your choices and on chance. You never lose the amount you keep safe, but there are two possible outcomes for the amount you bet:

- GOOD outcome: you earn three times the amount you bet
- BAD outcome: you lose the amount you bet

See examples on the next page.

Next

Example 1

You bet \$0.10 and keep safe the remaining \$0.90:

- In the GOOD outcome you end up with $\$0.10 * 3 + \$0.90 = \$1.20$
- In the BAD outcome you end up with \$0.90

Example 2

You bet \$0.90 and keep safe the remaining \$0.10:

- In the GOOD outcome you end up with $\$0.90 * 3 + \$0.10 = \$2.80$
- In the BAD outcome you end up with \$0.10

The next page explains the chance component of the lottery.

Prev

Next

We will toss a virtual and fair coin to determine which outcome happens.

If the coin turns up heads, the GOOD outcome happens.



If the coin turns up tails, the BAD outcome happens.



Prev

Next

(D-1) Treatment with *neutral* risk task

Recall that you found 1 SETs out of 28 possible SETs.

Below you can see 2 SETs, half of which you found and half of which you did not find.



We'll randomly select one of the 2 SETs, where each SET has the same chance of being selected.

- If the randomly selected SET is one you found, the GOOD outcome happens.
- If the randomly selected SET is not one you found, the BAD outcome happens.

Prev

Next

(D-2) Treatment with *context* risk task

Subject#: AZCDGH

The actual randomization will be done using public and verifiable means. Specifically, it will use future results from the Pennsylvania Lottery.

For more details, please e-mail Felipe A. Araujo at f.araujo@pitt.edu or check this study registration at the American Economic Association website.

Prev

Next

Subject#: AZCDGH

Please use the slider to decide how much of the 100 cents to bet and how much to keep safe.



Keep safe:

??

Bet

??

If randomly selected SET is one you found, you will make: ??
Otherwise, you will make: ??

Instructions

Submit

Subject#: AZCDGH

Please use the slider to decide how much of the 100 cents to bet and how much to keep safe.

Keep safe:

30

Bet

70

If randomly selected SET is one you found, you will make: $\$0.70 \times 3 + \$0.30 = \$2.40$
Otherwise, you will make: \$0.30

[Instructions](#)

[Submit](#)

Subject#: AZCDGH

What is the chance of the GOOD outcome occurring?

Please enter a number between 0 and 100, where 0 means 0% chance and 100 means 100% chance.

If you get this question right, you will receive an additional \$0.50 as bonus on Mturk.



[CONTINUE](#)

Please answer a few questions about yourself

Age:

18-30 **31-45** **46-65** **65+**

Gender:

Female **Male** **Other**

Highest degree completed so far:

High School **Some College** **Bachelors** **Masters** **Ph.D.**

CONTINUE

Thank you!

Any bonus payments will be made within 5 days.

Please enter the following paycode on Amazon M-Turk:

a52950c8

APPENDIX B. TABLES AND GRAPHS

TABLE B.5. Effect of probability assessment on betting behavior

	OLS		Tobit	
	(1)	(2)	(3)	(4)
Constant	29.91*** (5.75)	32.38*** (11.89)	25.26** (7.96)	19.57 (15.87)
Probability assessment	.16 (.11)	.15 (.13)	.21 (.15)	.22 (.16)
Controls		X		X
N	431	430	431	430

Note: Figures are derived from OLS and Tobit regressions of share of endowment bet on the objective probability assessment. Controls include hand fixed-effects and dummies for age group (18-35, 36-45, 46-65, and 65+), education level (high-school, some college, college, and masters+) and gender.

*** $p < 0.01$ ** $p < 0.05$ * $p < 0.10$