STANDARD ADULT CONSENT FORM

PRINCETON UNIVERSITY INSTITUTIONAL REVIEW BOARD

TITLE OF RESEARCH: *Probability Experiment in El Salvador*

INVESTIGATOR: *Dean Spears*

The following informed consent is required by Princeton University for any person involved in a research study conducted by investigators at the University. This study has been approved by the University's Institutional Review Board for Human Subjects.

You have:

A. Provided me with a detailed explanation of the procedures to be followed in the project, including an identification of those which are experimental.

I will play a game involving randomness and choice, and will be paid based on both my decisions and luck. In the game, I will choose envelopes out of which to randomly draw tokens. I will also answer survey questions about my life and my studies at UES. My answers will only be reported anonymously.

B. Answered any questions that I have regarding the study.

I understand that:

A. My participation is voluntary, and I may withdraw my consent and discontinue participation in the project at any time. My refusal to participate will not result in any penalty.

B. By signing this agreement, I do not waive any legal rights or release Princeton University, its agents, or you from liability for negligence.

I hereby give my consent to be the subject of your research.

_____

Signature

_____

Date

THIS PAGE MUST BE PROVIDED TO THE SUBJECT

Please keep this sheet in case you have any questions about this research project.

1. TITLE OF RESEARCH: *Probability Experiment in El Salvador*

2. For answers to any questions you may have about this research, contact:

PRINCIPAL INVESTIGATOR:
Dean Spears
Princeton University, EEUU
dspears@princeton.edu

3. For answers to any questions you may have about your rights as a research subject, contact:

Joseph Broderick
Secretary, Institutional Review Board for Human Subjects
P.O. Box 36
Princeton University
Princeton, NJ 08544
609.258.3976

(1)
A bat and a ball cost $1.10 in total. The bat costs a dollar more than the ball. How much does the ball cost?
____ cents

Un lapicero y un cuaderno cuestan un dólar y diez centavos. El cuaderno cuesta un dólar más que el lapicero. Cuánto cuesta el lapicero?

(2)
If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?
____ minutes

Si 5 mujeres se demorran 5 minutos en hacer 5 pupusas, cuánto tiempo se demorrarán cien mujeres en hacer 100 pupusas?

(3)
In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?
____ days

En un campo, hay un macizo de flores. Cada día, el tamaño del macizo dobla. Si toman 48 días para que las flores cubran el campo entero, cuántos días toman para que cubran la mitad del campo?

S1. ¿Cuál es su asignatura principal o especialización? _____

[*What is your major?*]

S2. ¿Por cuántos años ha estudiado usted al nivel universitario? _____

[*For how many years have you studied at the univesrity level?*]

S3. ¿Cuántos cursos de matemáticas ha seguido/cumplido usted
al nivel universitario? _____
[*How many math clases have you completed at the university level?*]

S4. ¿Recibe usted una beca? [*Do you receive a scholarship?*]

1. ☐ Sí
2. ☐ No.

S4a. Si sí, ¿es una beca concedida en función de necesidades, es decir, teniendo en cuenta sus ingresos personales y familiares?

1. ☐ Sí [*Is it a need based scholarship?*]
2. ☐ No.

S5. ¿Usted se crió en San Salvador? [*Were you born in Sal Salvador?*]

1. ☐ Sí
2. ☐ No.

S5a. Si no, ¿dónde? _____

S6. ¿Aparte de usted, cuántos hermanos y hermanas tiene? _____
[*Apart from yourself, how many brothers and sisters do you have?*]

S7. ¿A qué trabajo se dedica o se dedicaba principalmente su padre?

1. ☐ Empleado asalariado
2. ☐ Jornalero [*What was your father's principal work?*]
3. ☐ Dueño o patrón
4. ☐ Por su cuenta o trabajador independiente
5. ☐ Trabajador de su propia finca
6. ☐ Empleado doméstico
7. ☐ Quehaceres del hogar
8. ☐ Rentista
9. ☐ No empleo
10. ☐ Otro, ¿cuál?:_____

S8. ¿Cuál es o fue el nivel educativo más avanzado al que llegó su padre?

1. ☐ Ninguno.
2. ☐ Sabe o sabía leer y escribir.
3. ☐ Primaria incompleta.
4. ☐ Ciclo 1. [*What was the highest educational level your father reached?]*
5. ☐ Ciclo 2.
6. ☐ Ciclo 3.
7. ☐ Educación media incompleta.
8. ☐ Bachillerato.
9. ☐ Educación superior tecnológica.
10. ☐ Educación superior universitaria.
11. ☐ Otro, ¿cuál?:_____

S9. ¿Cuál es o fue el nivel educativo más avanzado al que llegó su madre?

1. ☐ Ninguno.
2. ☐ Sabe o sabía leer y escribir.
3. ☐ Primaria incompleta.
4. ☐ Ciclo 1.
5. ☐ Ciclo 2. [*What was the highest educational level your mother reached?*]
6. ☐ Ciclo 3.
7. ☐ Educación media incompleta.
8. ☐ Bachillerato.
9. ☐ Educación superior tecnológica.
10. ☐ Educación superior universitaria.
11. ☐ Otro, ¿cuál?:_____

S10. ¿Cuántos años tiene usted? _____

[*How old are you?*]

S11. ¿En este momento, usted trabaja para ganar dinero?

1. ☐ Sí
2. ☐ No.

[*Are you working now to earn money?*]

Reduction of Compound Lotteries questions, I

For this game, you will make one decision, between option A and option B. If you are randomly selected to play this game for real money, then I will implement the option you chose, either A or B. If you win the game, then you will receive 1000 extra rupees as a bonus through mTurk.

Option A: There are two bags, each containing three tokens: two blue and one yellow. I will randomly draw one token out of each bag. You win if both of the tokens are blue. If either token is yellow, you lose. So, you win if a blue token is drawn two times, and each time there is a 2/3 (or 66.7 percent) probability that a blue token will be drawn.

Option B: There is one bag, containing five tokens: two blue and three yellow. I will randomly draw one token out of the bag. You win if this token is blue. If the token is yellow, you lose. So, you win if a blue token is drawn once, and there is a 2/5 (or 40 percent) probability that a blue token will be drawn.

Which option do you choose:

- ○ Option A: Win if blue is drawn twice, with 2/3 chance each time.
- ○ Option B: Win if blue is drawn once, with 2/5 chance.

Timing

- **This page timer will not be displayed to the recipient.**
- First Click: *11.793 seconds.*
- Last Click: *11.793 seconds.*
- Page Submit: *0 seconds.*
- Click Count: *1 clicks.*

Reduction of Compound Lotteries questions, II

For this game, you will make one decision, between option A and option B. If you are randomly selected to play this game for real money, then I will implement the option you chose, either A or B. If you win the game, then you will receive 1000 extra rupees as a bonus through mTurk.

Option A: The computer will randomly select two numbers from 1 to 100. Every number is equally likely to be chosen. If both numbers are greater than 50, you win. If either number is 50 or less, you lose. So, for example, you win if 63 and 88 are randomly chosen, but you lose if 14 and 56 are randomly chosen.

Option B: The computer will randomly select one number from 1 to 100. Every number is equally likely to be chosen. If the number is greater than 76, you win. If the number is 76 or less, you lose. So, for example, you win if 88 is randomly chosen, but you lose if 56 is randomly chosen.

- ☐ Option A: Draw 2 numbers, win if both are greater than 50.
- ☐ Option B: Draw 1 number, win if it is greater than 76.

Risk aversion questions

For this game, you will make ten decisions between option A and option B. Option A is always receiving 500 extra rupees for sure. Option B is having a 50 percent chance of winning some amount of money (the amounts of money will be different in different decisions) and having a 50 percent chance of receiving no extra money, 0 rupees.

If you are randomly selected to play this game for real money, one of your ten decisions will be randomly chosen by a computer. If, in that decision, you selected option A, then you will receive 500 rupees as a bonus through mTurk. If, in that decision, you selection option B, then I will randomly draw one token out of a bag with 5 blue tokens and 5 yellow tokens. If the token is blue, then you receive the listed amount of money; if the token is yellow then you get no extra money.

Decision 1

- ☐ Option A: 500 rupees for sure.
- ☐ Option B: 50 percent chance of 500 rupees; 50 percent chance of 0 rupees.

Decision 2

- ☐ Option A: 500 rupees for sure.
- ☐ Option B: 50 percent chance of 800 rupees; 50 percent chance of 0 rupees.

Decision 3

- ☐ Option A: 500 rupees for sure.
- ☐ Option B: 50 percent chance of 1000 rupees; 50 percent chance of 0 rupees.

Decision 4

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 1100 rupees; 50 percent chance of 0 rupees.

Decision 5

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 1200 rupees; 50 percent chance of 0 rupees.

Decision 6

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 1300 rupees; 50 percent chance of 0 rupees.

Decision 7

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 1400 rupees; 50 percent chance of 0 rupees.

Decision 8

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 1500 rupees; 50 percent chance of 0 rupees.

Decision 9

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 1750 rupees; 50 percent chance of 0 rupees.

Decision 10

- ○ Option A: 500 rupees for sure.
- ○ Option B: 50 percent chance of 2000 rupees; 50 percent chance of 0 rupees.

Common consequence/probability weighting questions

For this game, you will make three separate decisions between option A and option B. If you are randomly selected to play this game for real money, one of your three decisions will be randomly chosen by a computer. Your decision for that game will be implemented with a computer to determine if you win:.

Decision 1:

Option A: You have

· a 25 percent (or 1/4) chance of winning 1000 rupees,

· a 50 percent (or 1/2) chance of winning 500 rupees, and

· a 25 percent (or 1/4) chance of winning 0 rupees.

Option B: You receive 500 rupees for sure (100 percent chance).

- ○ Option A
- ○ Option B

Decision 2:

Option A: You have

· A 25 percent (or 1/4) chance of winning 1000 rupees, and

· A 75 percent (or 3/4) chance of winning 0 rupees.

Option B: You have

· A 50 percent (or 1/2) chance of winning 500 rupees, and

· A 50 percent (or 1/2) chance of winning 0 rupees.

- ○ Option A
- ○ Option B

Decision 3:

Option A: You have

· A 75 percent (or 3/4) chance of winning 1000 rupees, and

· A 25 percent (or 1/4) chance of winning 0 rupees.

Option B: You have

· A 50 percent (or 1/2) chance of winning 1000 rupees, and

· A 50 percent (or 1/2) chance of winning 500 rupees.

- ○ Option A
- ○ Option B

Form 1: Experiment first, A is many

M F ____ Terminada

Buenos días. Soy profesor de los Estados Unidos. Estoy haciendo una encuesta sobre la vida y decisiones de personas como usted, aquí en El Salvador. Tengo algunas preguntas y un juego. En total, tomaría diez minutos y yo daré a usted tres dólares para agradecerle por participar.

¿Tiene preguntas?

Game

Primero, vamos a hacer en juego. Si gana el juego, le daré 6 dólares; si pierde, le daré 3 dólares para agradecerle para su participación.

En cada sobre, hay fichas azules y fichas amarillas, como estas. Para ganar, usted tiene que sacar una ficha azul de un sobre, sin mirar dentro del sobre. Y en el juego, hay dos maneras de jugar—opción A y opción B. El juego es que usted me dirá cómo preferiría jugar este juego.

¿Tiene preguntas?

La opción A es así: Hay dos sobres, cada uno tiene dos fichas azules y una ficha amarilla. Para ganar, tiene que sacar una ficha azul de cada sobre, es decir, dos veces.

La opción B es así: Hay un sobre, que tiene dos fichas azules y tres fichas amarillas. Para ganar, necesita sacar una ficha azul de este sobre, es decir, una vez.

¿Tiene preguntas?

Ahora, ¿Qué decide? Preferiría jugar de la manera A o B?

More less

Bueno – Pero antes de veamos si garará, por favor, hágame el favor contestar algunas preguntas.

Survey

1. ¿Cuántos años tiene usted? _____
2. Aparte de usted, ¿cuántas otras personas viven en su casa? _____ + 1
3. ¿Usted ha ido a la escuela? Sí No
    a. ¿Por cuántos años? _____
4. ¿Tiene usted empleo? Sí No
5. (If yes) ¿Además de eso, hace otra cosa para ganar dinero? Sí No

a. (If no) ¿Hace algo para ganar dinero? Sí No

6. Dígame, ¿cuánto sabe usted de la matemática? Usted diría que sabe mucho, un poco, o que no sabe casi nada de la matemática? Mucho Poco Nada
7. ¿Tiene usted hijos entre los seis y los diez y seis años? Sí No
    a. (If yes) ¿Asisten a la escuela? Sí No
    b. (If older) ¿Asistían a la escuela de niño/niña? Sí No
8. ¿Cree que sus niños irán a la universidad? Sí No

Winning

Son todos. Así que puede tomar el sobre/los sobres y sacar las fichas sin mirar en el sobre.

Ud. ha ganado 6 dólares/ ha perdido pero recibirá 3 dólares para su colaboración. Muchas gracias por su participación.

Hello. I am a teacher from the United States. I am doing a survey about the lives and decisions of people like you, here in El Salvador. I have some questions and a game. In total, it would take and I would give you three dollars to thank you for participating. Do you have any questions?

First, we are going to play a game. If you we the game, I will give you 6 dollars, if you lose, I will give you 3 dollars to thank you for your participants.

In each envelope, there are blue and yellow tokens, like these. To win, you have to draw a blue token from an envelope, without looking inside the envelope. In the game, there are two ways to play, option A and option B. The game is that you will tell me how you would prefer to play the game. Do you have questions?

This is Option A: There are two envelopes, each one contains two blue tokens and one yellow token. To win you have to draw a blue token from each envelope, that is to say, two times.

This is Option B: There is one envelope, which contains two blue tokens and three yellow tokens. To win, you have to draw a blue token from each envelope, that is to say, one time. Do you have questions?

Now, what do you decide? Do you prefer to play using option A or B?

Good – but before we see if you will win, please do me the favor of answering a few questions.

How old are you?

Apart from you how many people live in your house?

Have you been to school? For how many years?

Do you have [formal] employment?

In addition to this do you do anything else to earn money?/Do you do anything to earn money.

Tell me: how much do you know about math? Would you say that you know a lot, a little, or almost nothing about math?

Do you have children between 6 and 16 years old?

Do they go to school? / Did they go to school when they were little?

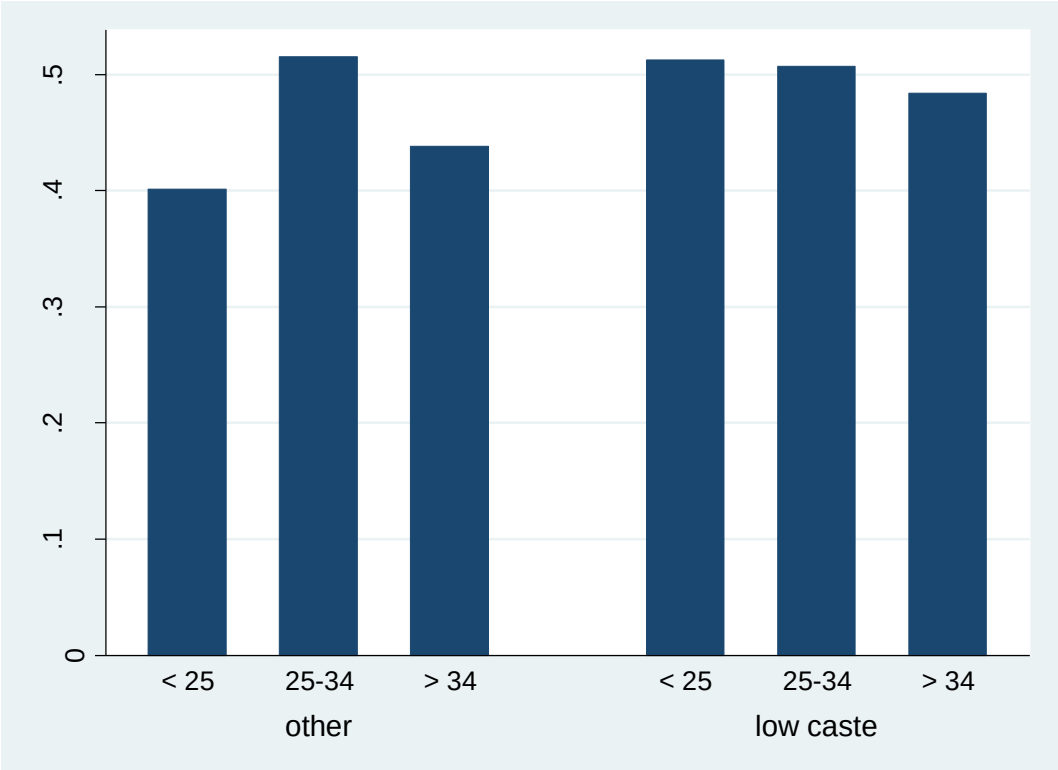
Do you believe you children will go to university?

Those are all. No you can take the envelope(s) and draw a token/the tokens without looking in the envelope.

You have won six dollars/ you have lost but will receive 3 dollars for participating. Thank you very much for participating.

Have poorer participants learned not to dislike compound lotteries?

If poorer participants learn over time not to dislike compound lotteries, we might expect their choice of simple lotteries to decline in age, relative to richer participants. The Indian data, with the largest sample, provides the best test of this. There is no evidence of a differential trend in the probability of choosing a simple lottery:



A more complicated hypothesis is that, in the central regressions of investment on the interaction of poverty and compound lottery choice, the interaction may be greater in absolute value for older participants, because poorer people have learned not to be averse to compound lotteries. However, the interaction is not monotonically related to age:

	<25	25-34	> 34
Interaction	-0.179	-0.255	-0.195
Standard error	(0.126)	(0.118)	(0.206)

Are poorer participants more (or less) likely to choose compound lotteries?

The text of the paper mentioned that this is not the case among the Salvadoran women, but this analysis had a smaller sample, and perhaps low power. The Indian data has a much larger sample, and multiple available measures of poverty and demographic controls. However, the conclusion is the same: whether disadvantage is measured as asset poverty or as low caste, there is no overall association with compound lottery choice.

OLS: Fraction choosing simple lottery

	(1)	(2)	(3)	(4)	(5)
lottery:	2/3 × 2/3	2/3 × 2/3	both*	2/3 × 2/3	2/3 × 2/3
poor	0.0177	0.00543	-0.00880		
	(0.0357)	(0.0374)	(0.0273)		
low caste				0.0138	0.00781
				(0.0381)	(0.0389)
controls		✓	✓		✓
n	558	558	558	558	558

Robust standard errors in parentheses; no results are statistically significantly different from 0.
* "both" indicates choosing the simple lottery with both questions.

Instructional manipulation checks

As recommended by Oppenheimer, *et al* (2009), Study 5 included an "instructional manipulation check" to screen out participants who were not paying attention (or did not read English sufficiently well), in order to increase statistical power and meaningfulness of the results. The three questions were:

Question	Correct	Incorrect
How often have you suffered a fatal heart attack? (correct answer: never)	812	35
On many important issues, people have different opinions. Some people agree, and some people disagree, even very strongly. Here in this question, please select the number eight in the slider below, to rule out random clicking. (correct answer: 8)	599	248
Did anybody [in your household] ever own a … space rocketship? (correct answer: No).	796	51
Overall (all three correct)	**558**	**289**

Results are qualitatively similar, but attenuated, if the full sample of 847 is used, instead. Here are the results of the main regression, column 1 of table 5:

$$\widehat{different} = \underset{(0.02)}{0.70} + \underset{(0.03)}{0.12}\, poor + \underset{(0.04)}{0.17}\, chose\ simple - \underset{(0.06)}{0.14} poor \times simple.$$

Notice that the interaction remains statistically significant (standard errors in parentheses) .