Classroom Experiments

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How Do They Work?

- **Students are asked to make decisions in an artificial/controlled environment which incorporate certain incentive structures**

- **Decisions determine hypothetical pay-offs**
  - **Individual choice vs. Interactive choice games**

- **Usually last 20 – 40 minutes**

- **Can be either paper based or Online**

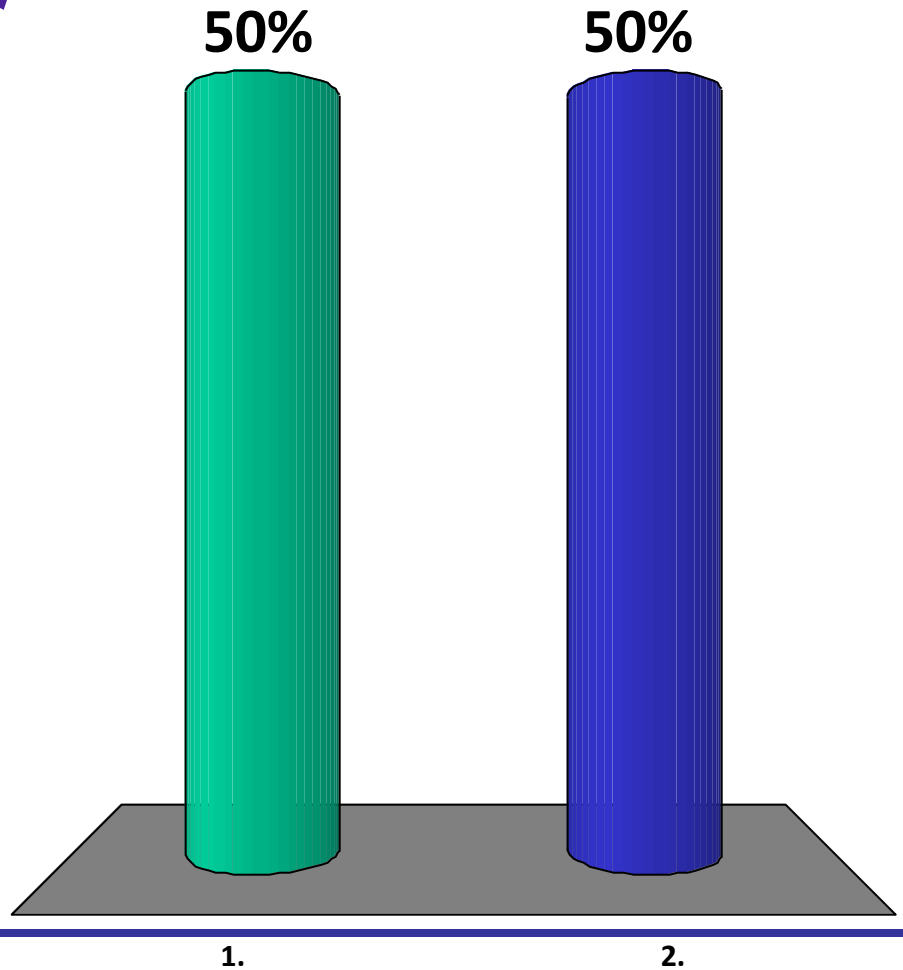- **The games generate data for analysis and discussion**

Are you

1. **Male**
2. **Female**

75%

25%

1.

2.
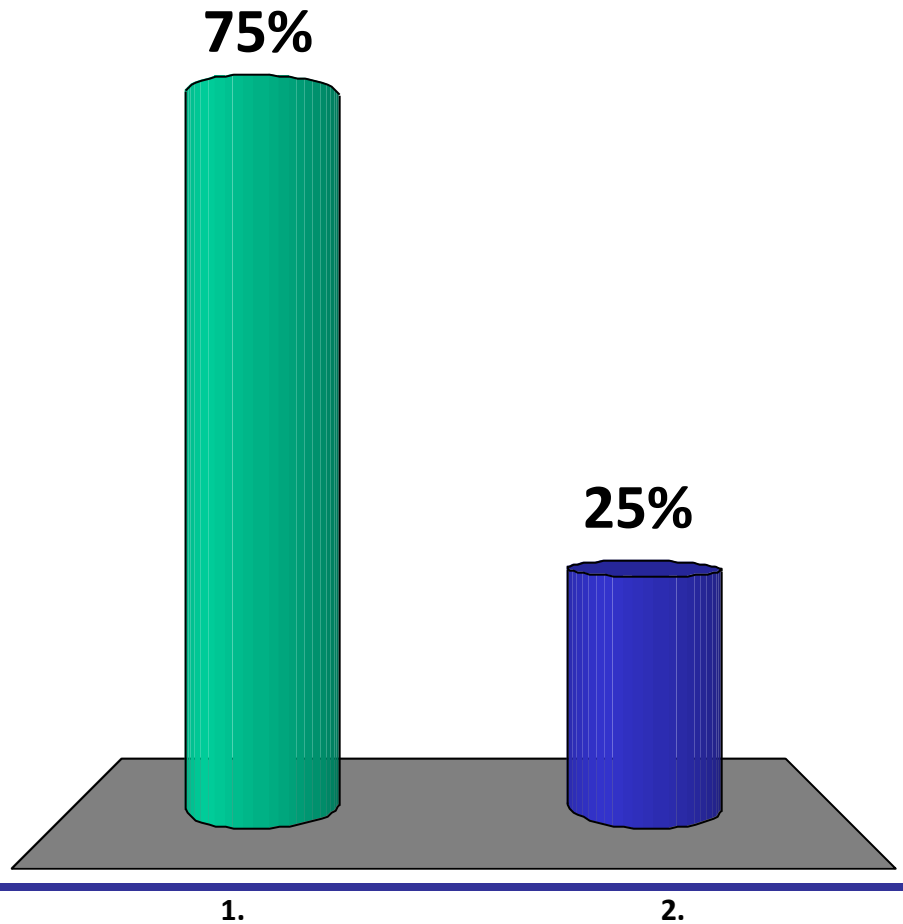
Are you

1. **40 years old or over**

2. **Less than 40 years old**

50% 50%

1. 2.

Have you used the clickers before?

1. Yes

2. No

75%

25%

1.   2.

Have you used the clickers before?

No
- 100% (Female)
- 0% (Male)

Yes
- 0% (Female)
- 100% (Male)
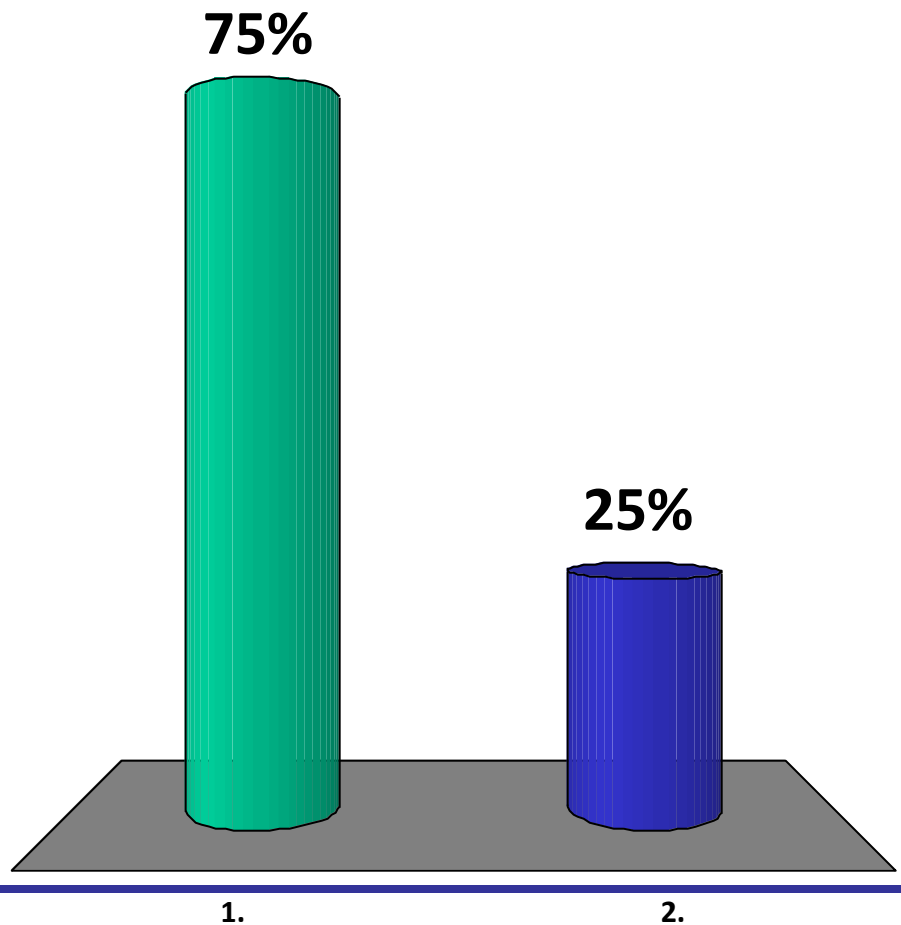
Male Female

Have you used the clickers before?

No
- 0%
- 50%

Yes
- 100%
- 50%
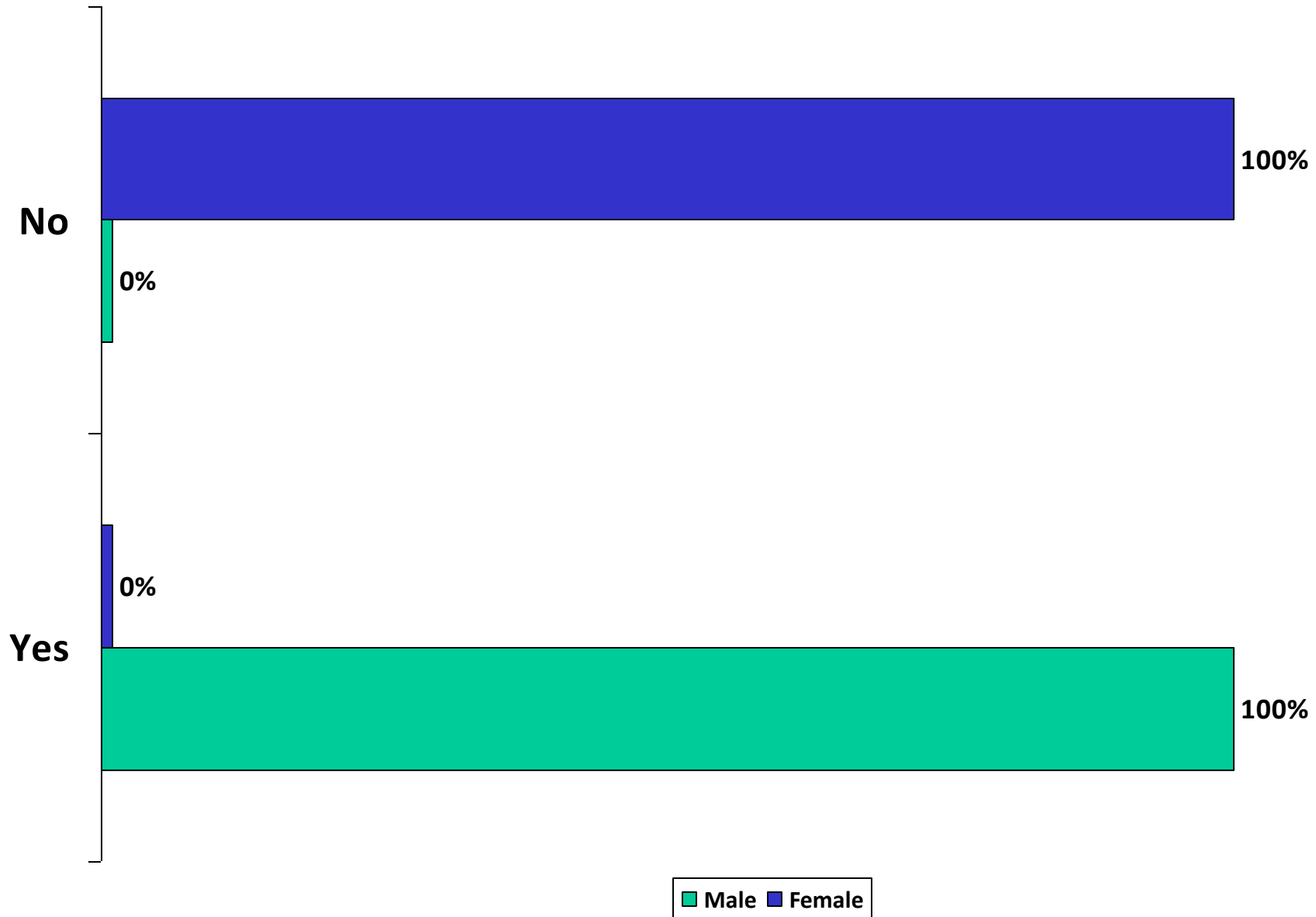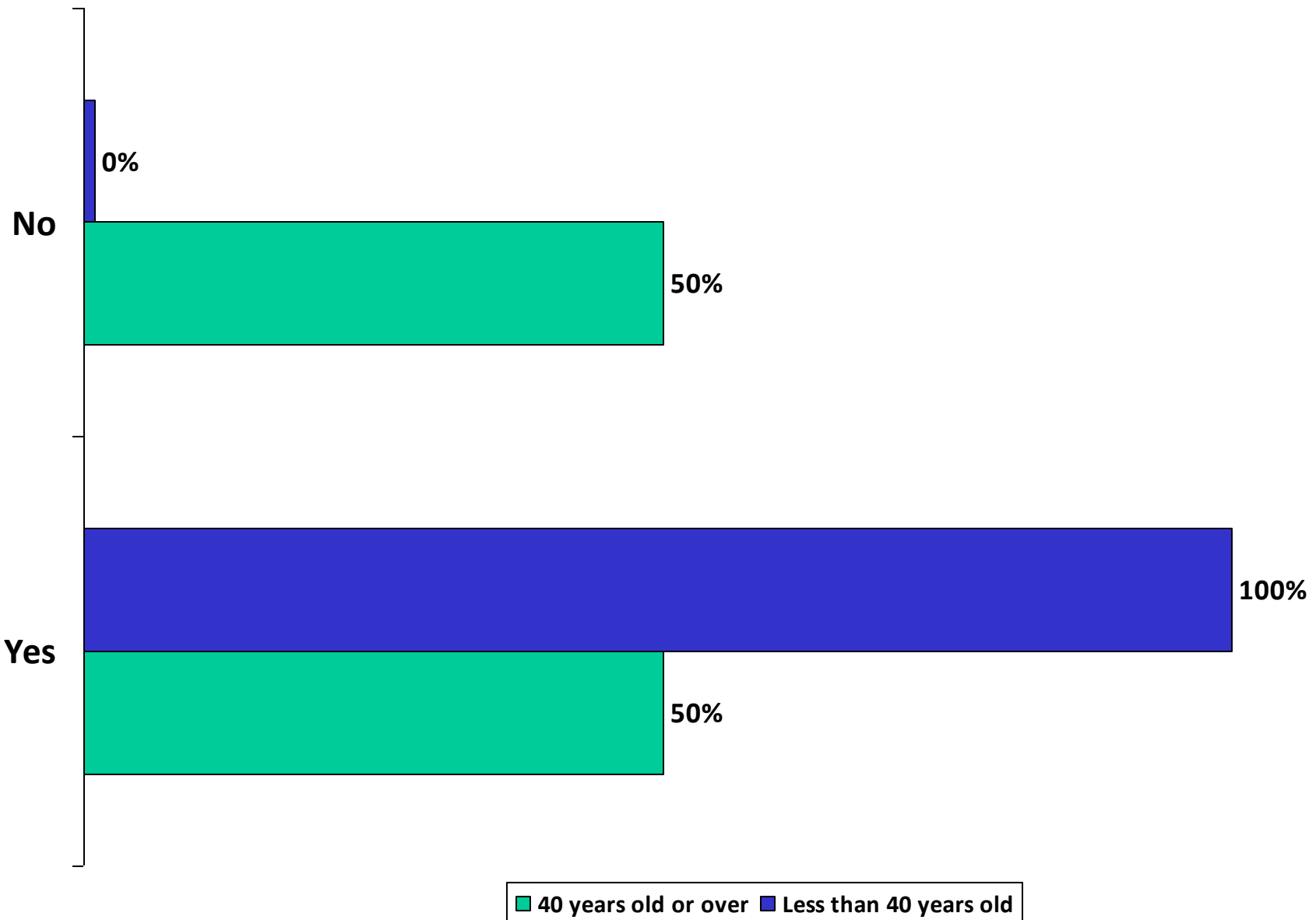
Game 1: Decision Making Under Uncertainty

Game 1: Decision Making Under Uncertainty

- **TV show: 'Deal No Deal' First shown on Netherlands TV in December 2002**

- **Broadcast in over 50 countries including Channel 4 in the UK**

- **Shortly before its 1,000 show in the UK, The Guardian referred to it having**

"A cult status and dedicated student following"

- **Data from the show has been used in academic research AEAweb**

Game 1: Decision Making Under Uncertainty

- **UK version - 22 people each with a box with a sum of money written under the lid, the amount could be from a range of different values.**
  - **UK £0.01 to £250,000**
  - **US $0.01 to $1,000,000**
- **Contestant removes boxes and then the banker makes an offer**
- **Playable online**
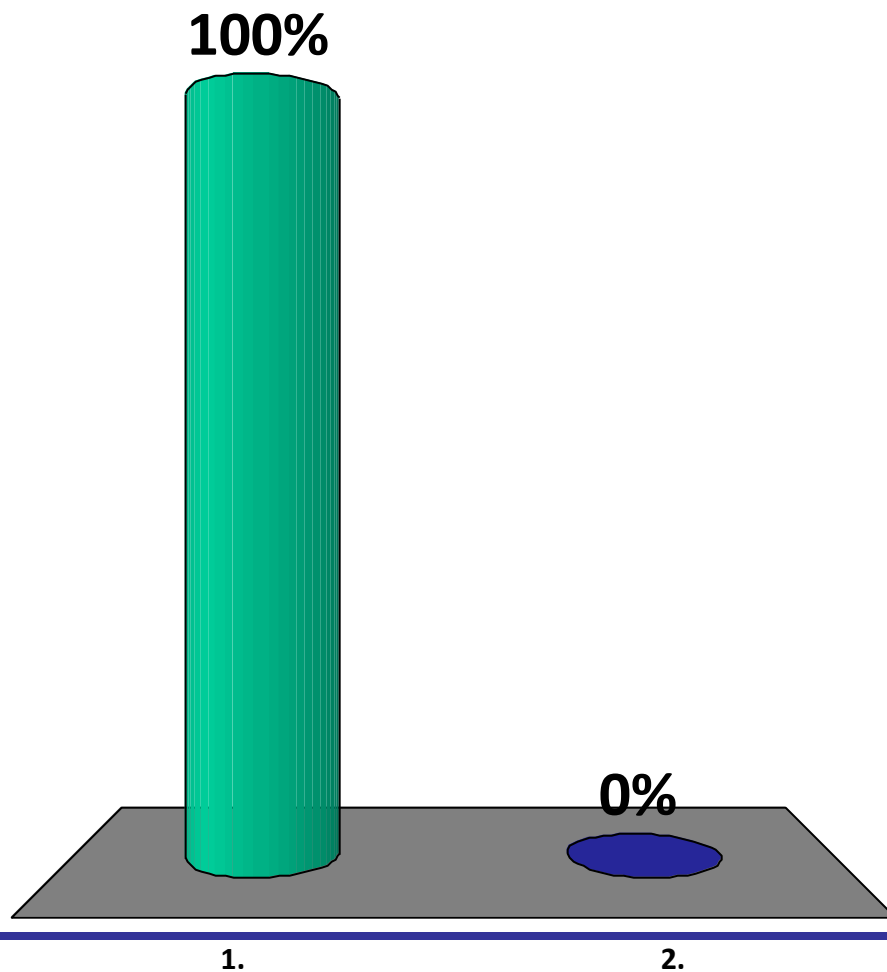- **NBC version has useful properties for teaching**

Game 1: Decision Making Under Uncertainty
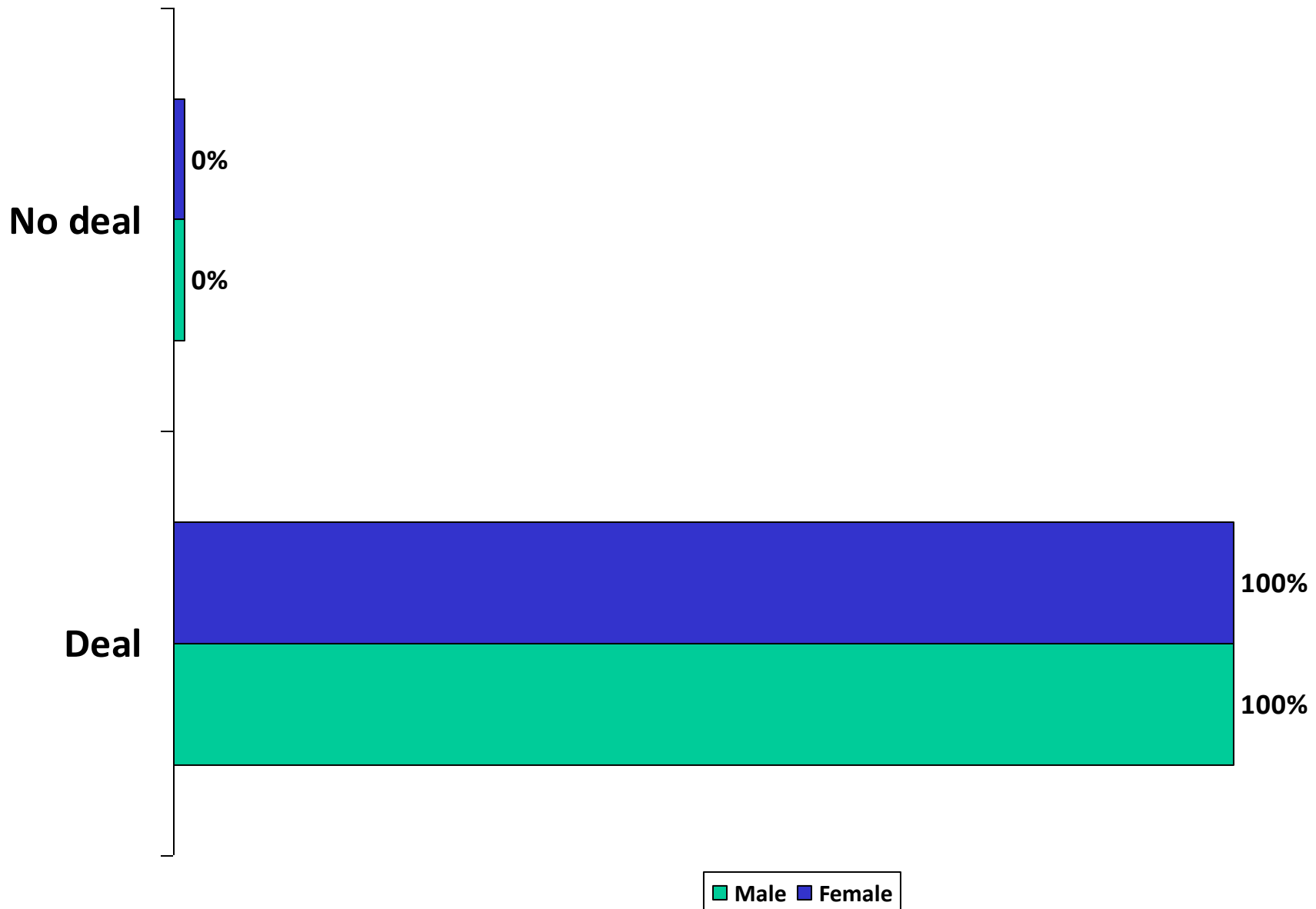
- **Choose one student volunteer to play the game in front of the class – they must choose a box.**

- **Early rounds will help those students who have never seen the game show before**

- **Give handout to the rest of the class at the end of round 7**

- **Deal Or No Deal Game Show - NBC Official Site**

- **Paper-based version of UK game**

- **See economicsnetwork.ac.uk/sloman_deal**

What would you do?

No deal — Female: 0%
No deal — Male: 0%

Deal — Female: 100%
Deal — Male: 100%

Legend: ■ Male ■ Female

What would you do?

No deal
- 0% (Less than 40 years old)
- 0% (40 years old or over)

Deal
- 100% (Less than 40 years old)
- 100% (40 years old or over)

Legend: ■ 40 years old or over ■ Less than 40 years old
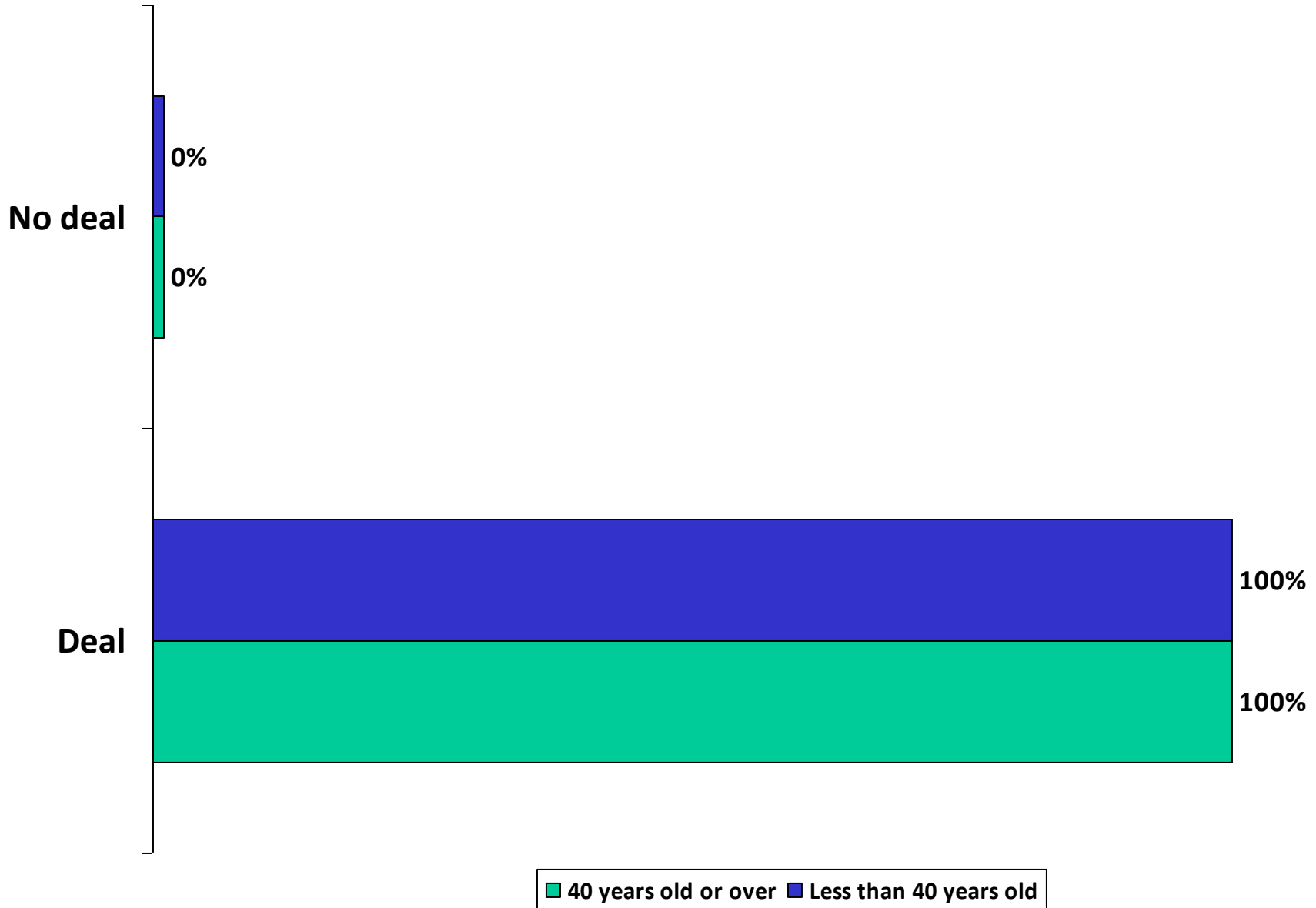
Experiment 2 – Some Simple Lottery Choices

Decision	Option A	Option B
1:	**1.00** of **£300** **0.00** of **£0**	**0.80** of **£400** **0.20** of **£0**
2:	**0.25** of **-£300** **0.75** of **£0**	**0.20** of **-£400** **0.80** of **£0**
3:	**0.25** of **£300** **0.75** of **£0**	**0.20** of **£400** **0.80** for **£0**
4:	**1.00** of **-£300** **0.00** of **£0**	**0.80** of **-£400** **0.20** of **£0**

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1. **Option A**

2. **Option B**

100%

0%

1.　　　　　　　　2.

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	A	B
Decision 1	%	%
	(80%)	(20%)

Experiment 2 – What choice did you make for decision 4?

1. **Option A**

2. **Option B**

100%

0%

1.
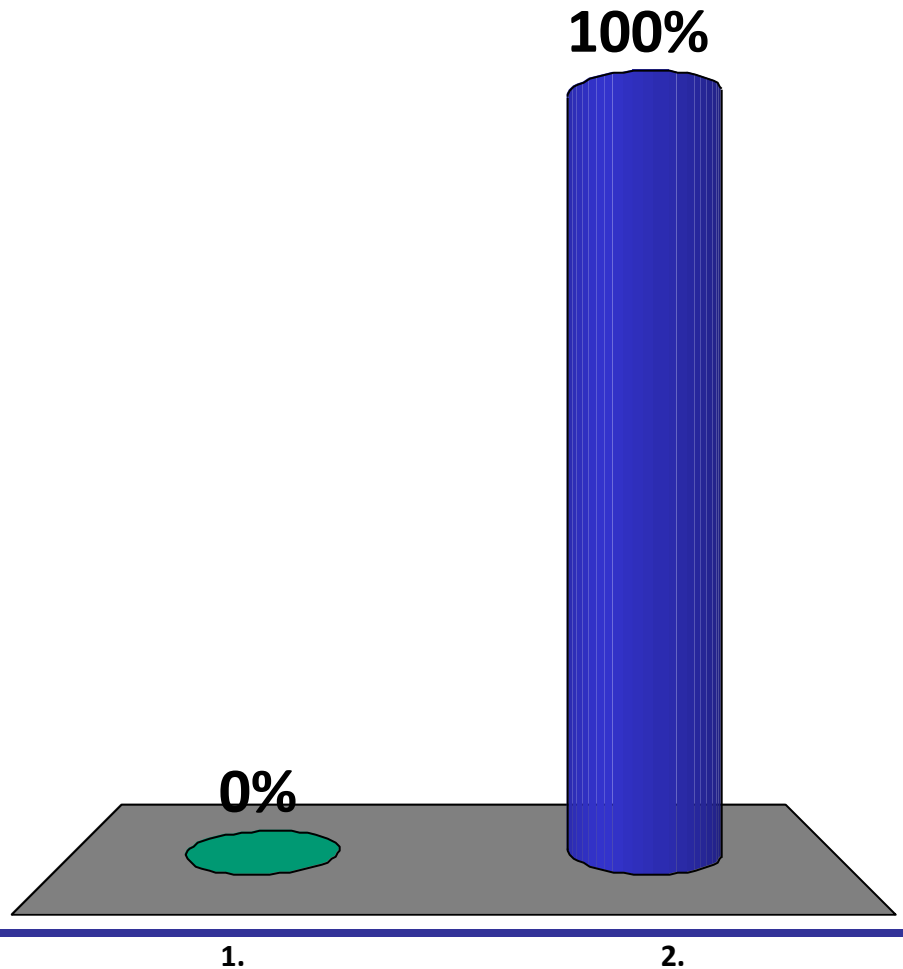
2.

	A	B
Decision 1	%	%
	(80%)	(20%)
Decision 4	%	%
	(8%)	(92%)

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Experiment 2 – Did you choose option A in decision 1 and option B in decision 4?

1. **Yes**

2. **No**
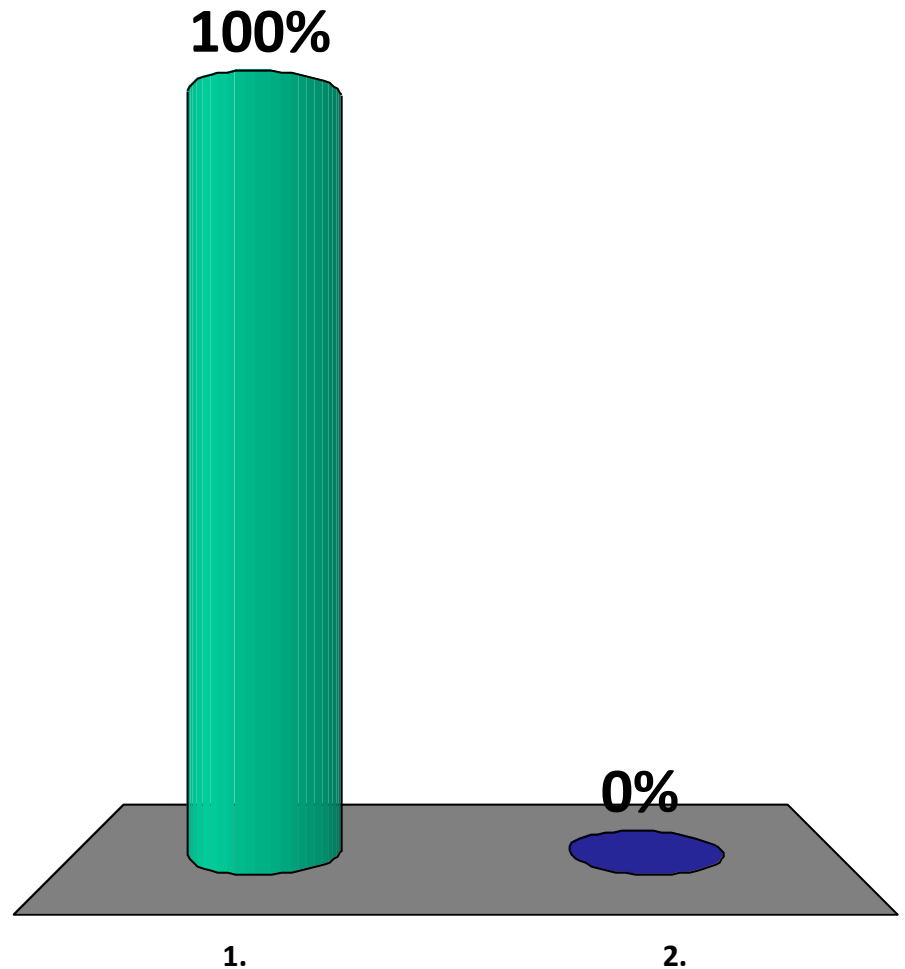
100%

0%

1.

2.

Experiment 2 – Did you choose option A in decision 1 and option B in decision 4?

No
0%
0%

Yes
100%
100%

Male Female
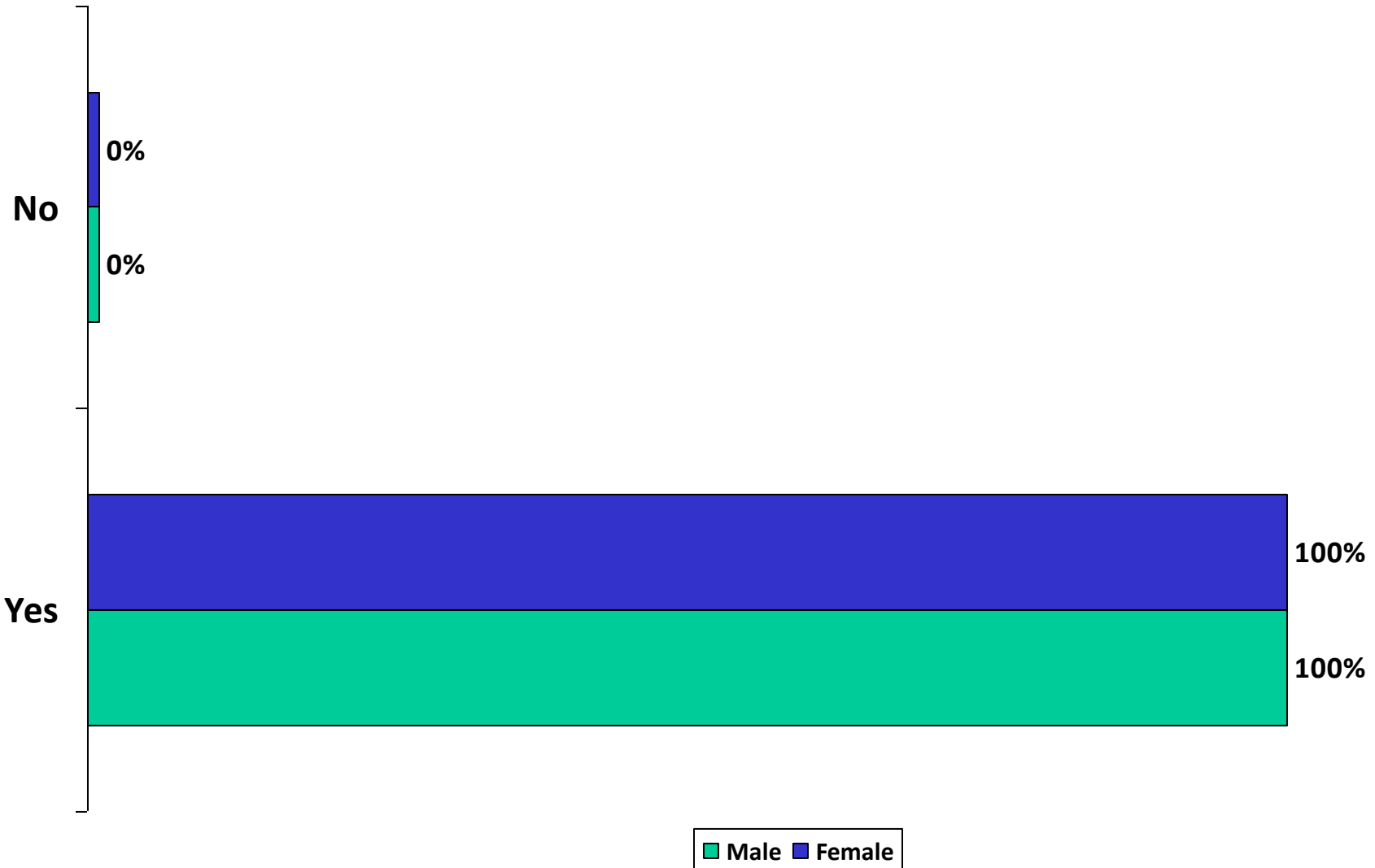
Other Lottery Choice Experiments

Decision	Option A	Option B
1:	**1.00** of **£2,400** **0.00** of **£0**	**0.01** of **£0** **0.66** of **£2,400** **0.33** of **£2,500**
2:	**0.66** of **£0** **0.34** of **£2,400**	**0.67** of **0** **0.33** of **£2,500**

Other Lottery Choice Experiments

Decision	Option A	Option B
1:	**0.001** of **£5000**	**1.00** of **£5**
2:	**0.001** of -**£5000**	**1.00** of -**£5**

Experiment 3: Playing Cards!

- **Activity**
  - **Each person (or pair) is given four cards of the same value (e.g. four threes or four queens)**
  - **Works well with 26 students**
  - **Each person/pair plays two cards each round without the other players finding out what cards they played**
  - **The cards are returned at the end of each round**
  - **Based on Holt and Laury**

Experiment 3 – Playing Cards

- **Each red card kept = pay-off of <u>£20</u>**

- **Each red card contributed to the stack provides a pay-off of <u>£25</u> for each participant/pair**

- **Each red card contributed to the stack provides a pay-off of <u>£1</u> for each participant/pair**

- **Each red card contributed to the stack provides a pay-off of <u>£5</u> for each participant/pair**

- **Pay-off for participant 'i' in any round t is π_{it}**

$$\pi_{it} = \alpha x_{it} + \beta \sum_{j=1}^{n} g_{jt}$$

- **α = Marginal return from keeping a red card (£20)**
- **β = Marginal return from a red card contributed (£25, £1 or £5)**
- **MPCR = β/α**
- **Is α < nβ?**

Public Good Experiment

- **Very easy to set up and fun to play**
- **Flexible**
  - **MPCR can easily be changed**
- **Could easily be adapted into a non-linear/threshold game e.g.**
  - **If RC contributed < 10: Pay-off = 0**
  - **If RC contributed $\geq$ 10: Pay-off = £50/player**
  - **Refund/rebates**

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Potential Benefits

- **Promote a more active learning environment and help achieve deeper learning**

- **"Student activity does not itself imply that learning will take place" Ramsden 2003**

- **"It is not enough just to do, and neither is it enough just to think. Nor is it enough simply to do and think. Learning from experience must involve linking the doing and the thinking" Gibbs 1988**

- **Important that they are fully integrated into the teaching programme**

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More Information

- **See Economics Network site for a range of games and tips on their use**

  - **http://www.economicsnetwork.ac.uk/themes/games.htm**