

PS3022 – Research Methods and Statistics II

Science Discovery Day 2020 – Printable PDF

The Ultimatum Game

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THE ULTIMATUM GAME



OVERVIEW

The ultimatum game is a benchmark test for examining sensitivity to fairness. It is an example of a non-cooperative bargaining situation. The ultimatum game has been seen as a sort of anomaly because the observed behaviour is different from the expected behaviour given the economic principles of income maximization. It is expected that people will act in their self-interest, however, it has been shown that people actually prefer fair outcomes to the economically rational ones. In children there seems to be a pattern of development, with children under 5 focused on self-interest and older children focusing more on fairness.

The Theory behind the Ultimatum Game:

The Ultimatum Game is highly influential in the world of economics. Economic game theory describes the behaviour of the players as rational. In the case of the Ultimatum Game a rational outcome would be the responder accepting any non-zero offer, anything is better than nothing. However, research has shown that people do not act rationally, instead people prefer fair outcomes. In children age has an impact on how they behave during this type of game. As they develop, the strategy employed changes depending on their ability to pick up on societal context clues and how that impacts their own self-interest. This outcome has defied expectations and has resulted in research re-examining self-interest to explain why this is true.

Age range:

- 4 years old +

Materials:

- Play or Fake Money
 - A free printable template has been attached to this document for your convenience (See Below)
- Alternatively, chocolate coins or stickers can be used for younger children instead of play money.

How to Play:

- This game has two players. One player is the 'proposer'. The other player is the 'responder'.
 - For younger children, you can act as the Experimenter to mediate the game

- The proposer is given £100 in play money (or 10 stickers) and decides how much of that amount they want to give to the responder. The responder then decides whether they want to accept or reject the offer.
- If the responder ACCEPTS, the offer – both players split the money as the proposer suggested
- If the responder REJECTS, the offer – neither player gets any money
- The proposer and responder are allowed to negotiate. If you find that the children are being too fair with their proposals, you can take on the role of the proposer and make an unfair offer.

Example Script

(Stickers for younger children; fake money for older children)

Experimenter: You (point to participant 1) will get all this money and **you** choose how to split this up with your friend and how 'money' each of you will get

(Break for first round – see how fair they are and once an offer has been made read the following)

(If they are too fair, Experimenter can take the role of the proposer and make an unfair offer.)

Experimenter: When **you've** decided, then **your friend (point to participant 2)** can choose to accept it or not

Experimenter: If **your friend (point to participant 2)** doesn't like your decision, then **neither** of you get anything

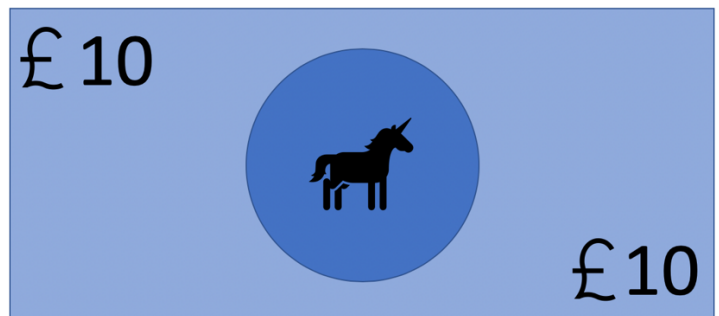
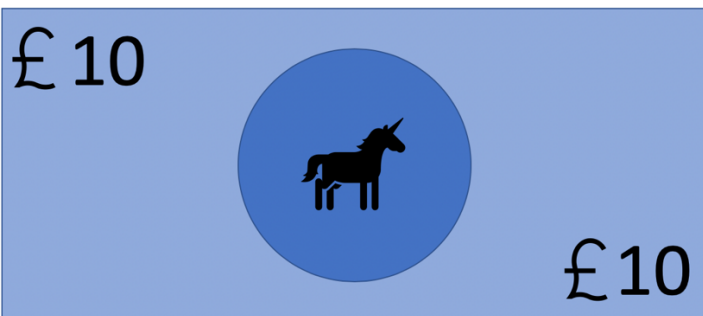
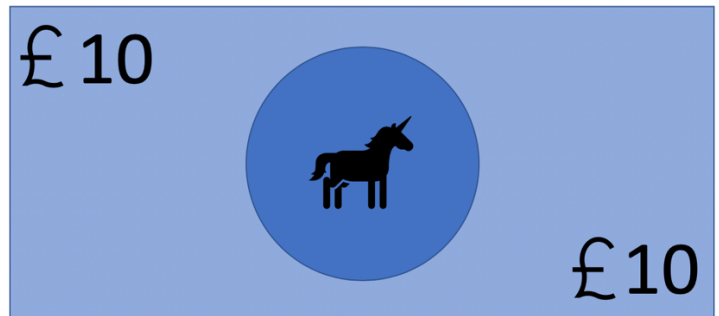
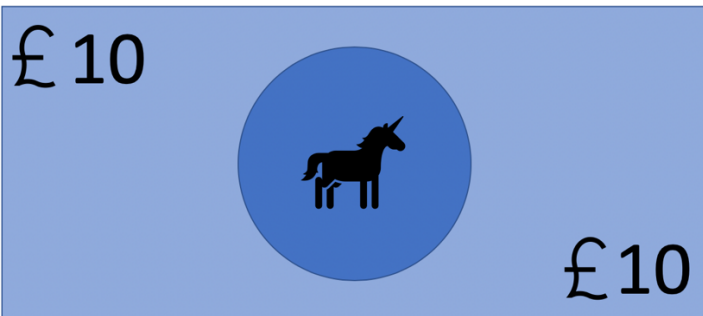
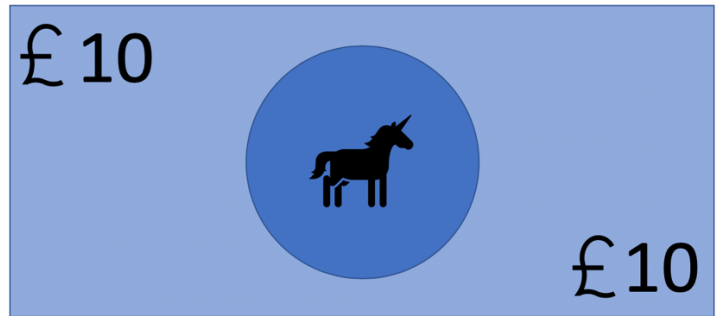
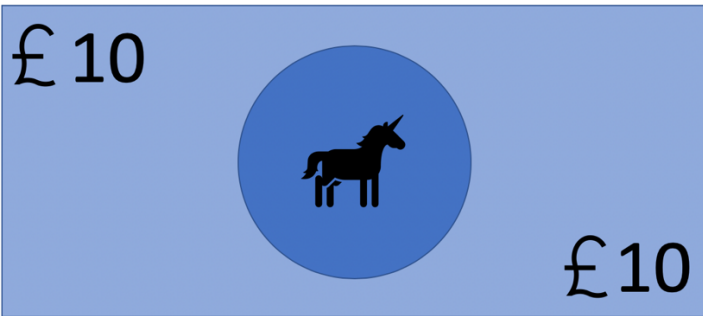
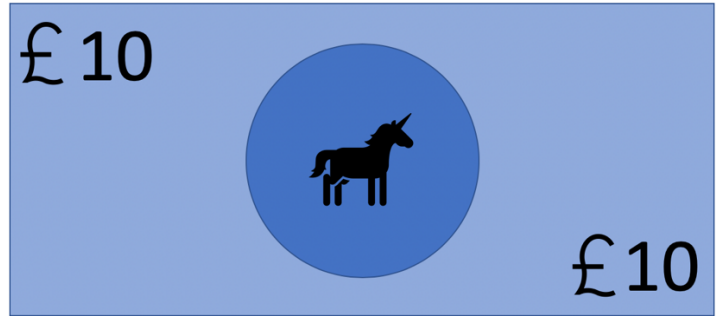
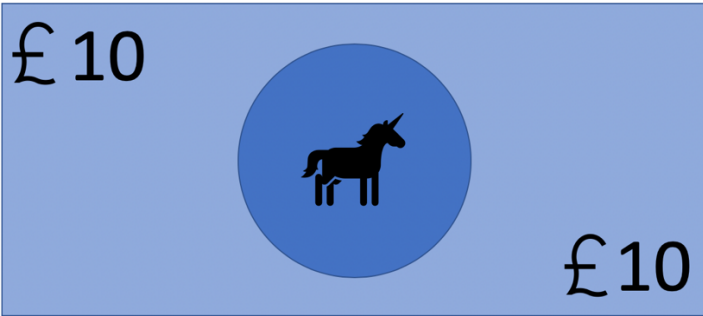
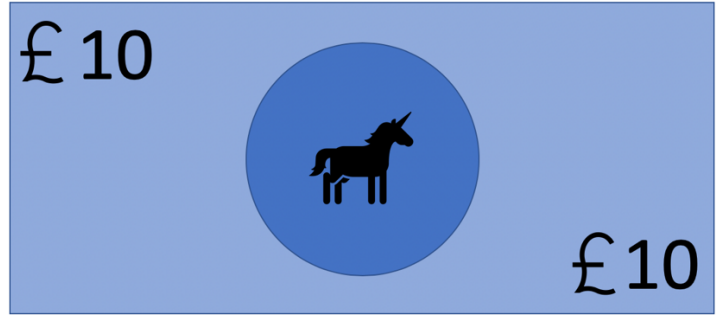
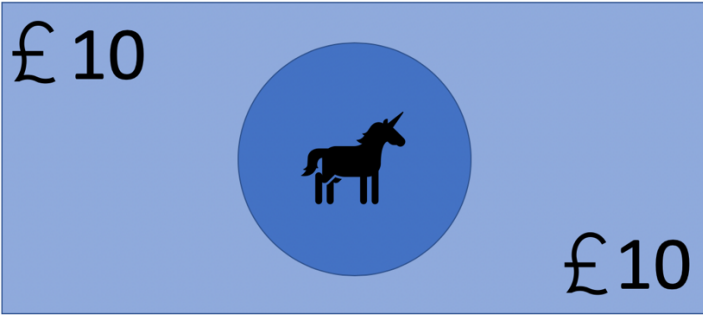
Discussion Questions:

- Would you accept their offer if they were being purposefully mean and giving you a small number of money/stickers?
- What do you think would happen if you were playing with the opposite gender?
- What offer would you make if you had twice the money?
- Do you think your offer would change if the money you had was a secret?
- Do you think you would accept or reject the offer if you didn't know how much money your friend had to give?
- How do you think a younger/older child will behave in the game? Would they be more/less fair?
- Do you think your offers would be different if you did this in groups?

Other Research

- **Developmental Trends**
 - Before age 5, children are focused on their own self-interest and the proposer will give very unfair offers to the responder. From ages 5-7 there is a focus on equality (both parties get the same amount). After age 7, children begin to think about equity (both parties get a fair share, but it's not necessarily equal).

- **Gender Effects**
 - Women tend to give more generous offers than men, and this is not related to the gender of the receiver, women are also more likely to accept any offer regardless of fairness. Offers also tend to be accepted more if it comes from a woman (chivalry effect), and when both participants are women, then they tend to almost always come to an agreement (solidarity effect).
 - When the Ultimatum Game is played with only the proposer knowing the total amount of money, rejection rates tend to drop, with male-proposers making more selfish/strategic offers than female-proposers. In other words, when the responder does not know the total amount of money available to be shared, they are more likely to accept the offer from the proposer.
- **Group Effect**
 - When the Ultimatum Game is played in groups, offers were more unfair and rejection rates were lower, when compared to individuals. Groups were less generous than individuals, making more unfair offers to responders. However, unlike individuals, groups were more willing to accept those unfair offers. They seem to understand the game and strategic aspect of the Ultimatum game more than individuals. Groups are seen as more rational acting than individuals, understanding that something for everyone is better than nothing.
- **Chimpanzees**
 - Chimpanzees are one of our closest evolutionary relatives and engage in cooperative behaviour similar to humans. When tested in the Ultimatum Game, chimpanzees showed no sensitivity to fairness and were rational maximizers. In other words, when given the opportunity chimpanzees did not make fair offers. Chimpanzees tended to base their decisions on a purely gain-centered mentality, accepting any offer as long as they get something for it, no matter how fair this is. Despite the fact they could quantify the differences between each other's gain, they still did not reject unfair offers.



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