How much do initial positions matter in drawing fairness? Evidence from a “symmetrized” Ultimatum Game

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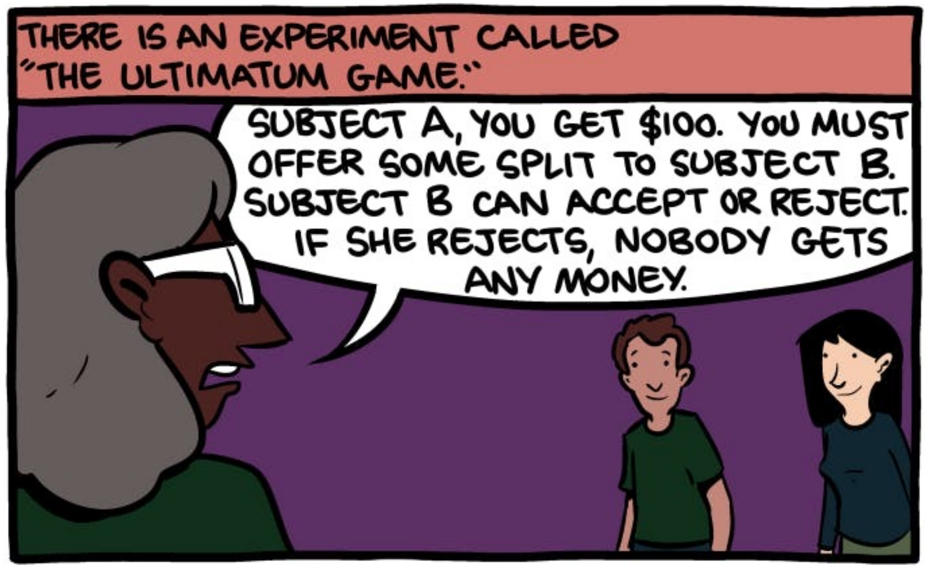
Ultimatum game: the standard setting

- The UG is an **a-symmetric** 2-players game with the following minimalist rules:
- The "proposer" (P) can offer a certain fraction s of a good (which, without loss of generality, we normalize to 10) to the "responder" (R)
  - Ex.: P offers $s = 3$ → Proposal: $\pi_P = 7/10$ and $\pi_R = 3/10$
- The R can
  - accept the offer (→ $\pi_P = 7/10$ and $\pi_R = 3/10$), or
  - reject it → both players receive 0 ($\pi_P = \pi_R = 0$)



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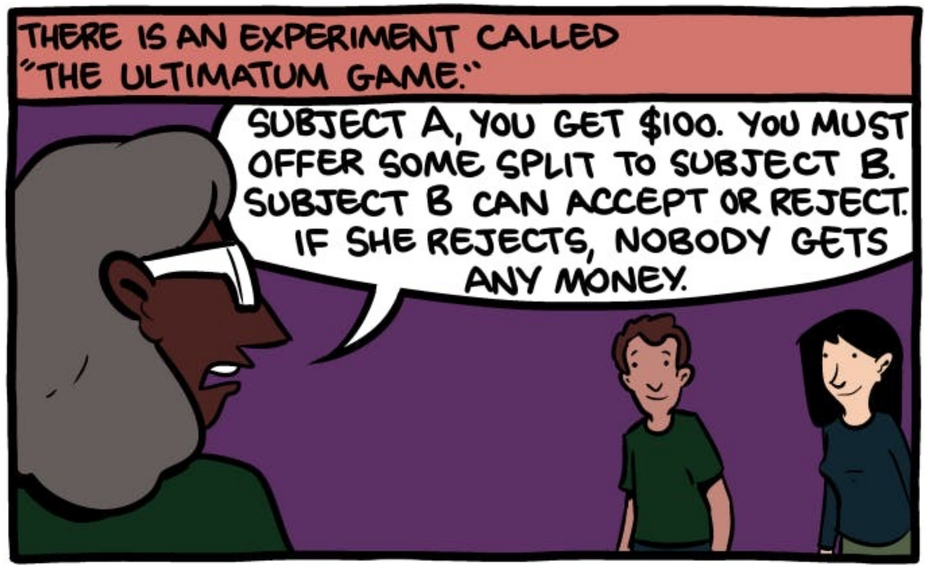

- The only equilibrium is to offer a positive, infinitesimal $s = \varepsilon$, namely and to accept this
  → $\pi_P = (10 - \varepsilon)/10$ and $\pi_R = \frac{\varepsilon}{10}$
  - The R does not have an incentive to decline that offer, as ε is still larger than zero
  - The P would not deviate from that strategy because it grants her the largest amount

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- The vast majority of accepted offers in almost any experiment of UG has an s which is around 4/10
- The role of fairness (Fehr & Schmidt 1999; Camerer 2003; Bicchieri 2006)
  - When an R declines an offer $s \geq \varepsilon$, s/he signals that his/her choice has non-monetary arguments, but it is based on the fact that the proposal is considered *un*fair
  - The P who offers more than theory predicts could be explained by the fact that the P has a taste for fairness and/or that the P is worried that unfair offers will be rejected

Our RQ

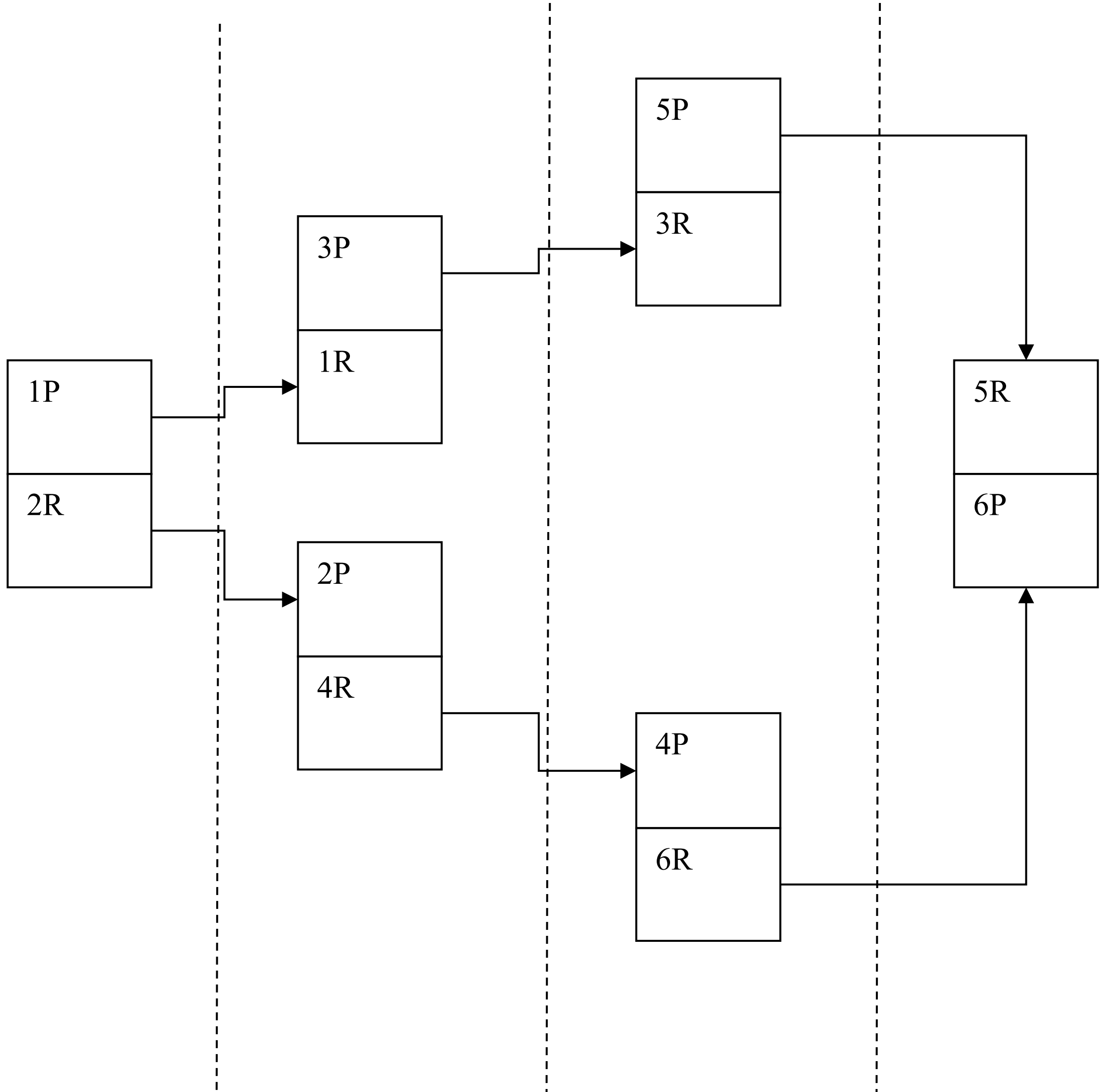
- Our paper is on *whether and how* different meanings/ideas of fairness may come about
- We show that the idea of fairness does depend on starting roles of players

Our setting and prediction

- Six players (1, 2, 3, 4, 5 and 6)
- Each player makes the UG twice (=symmetric game)
  - Player acts as P in the first UG and becomes a R in the second UG

    (Players 1, 3 and 5)
  - Player acts as R in the first UG and becomes a P in the second UG

    (Players 2, 4 and 6)



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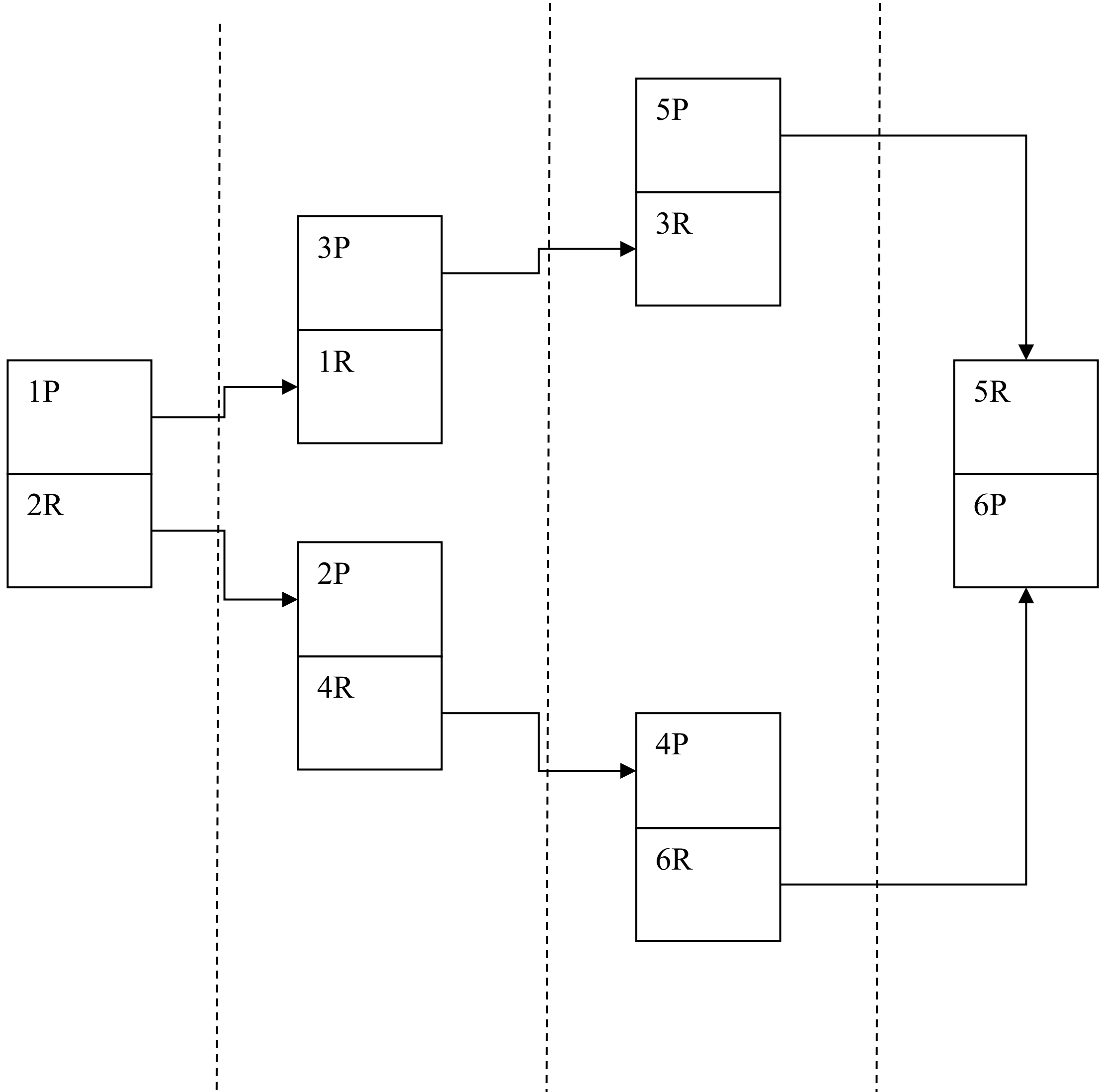
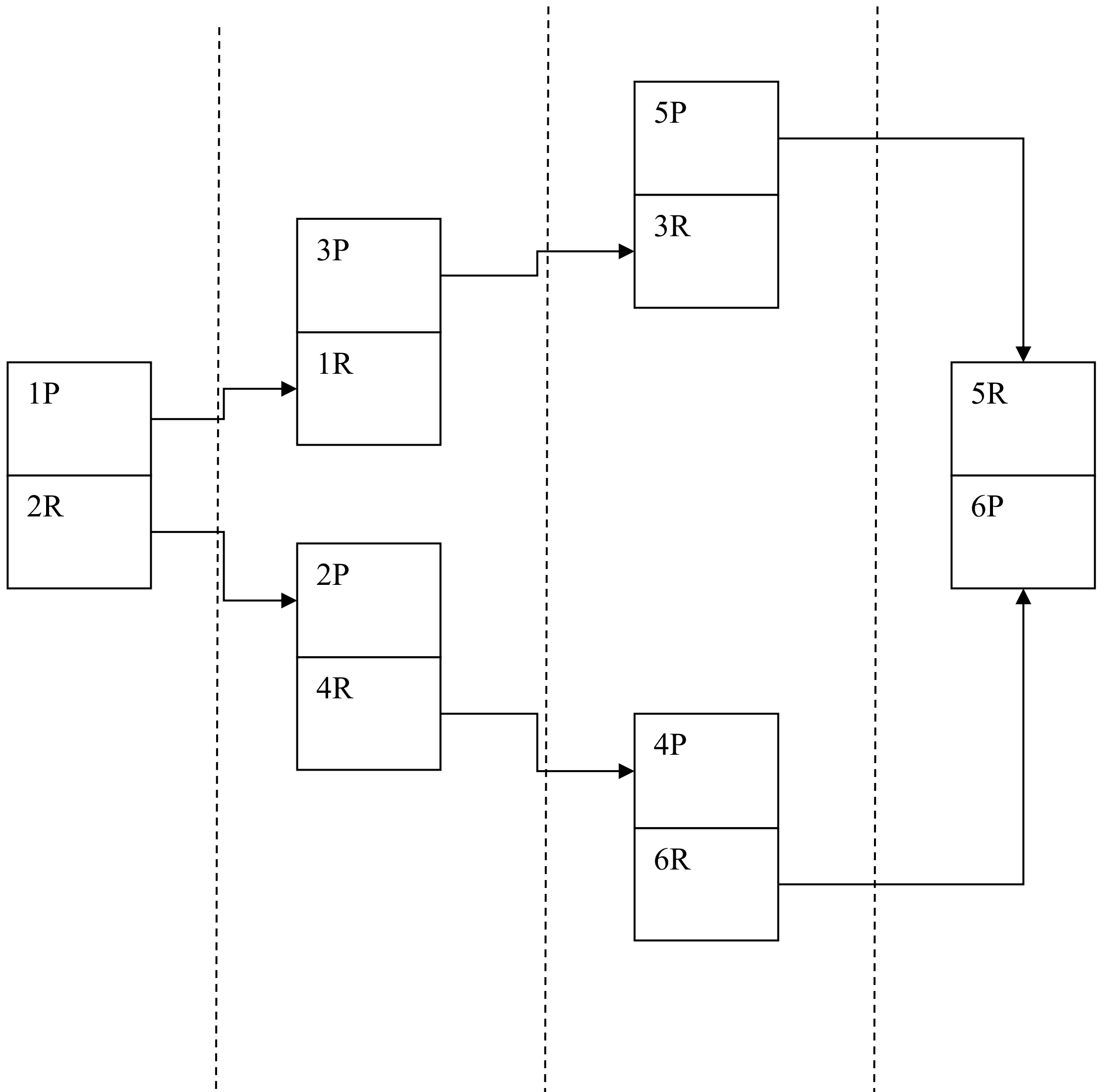
- Because each player plays for *once* as P and for *once* s/he plays as R, *on average*, each player should obtain the same sum of payoffs



Our result

- **Null hypothesis**: *Reversing roles in an UG, the total payoff of an individual who begins as P and ends as R* ***is equal*** *to the total payoff of an individual who begins as R and ends as P*



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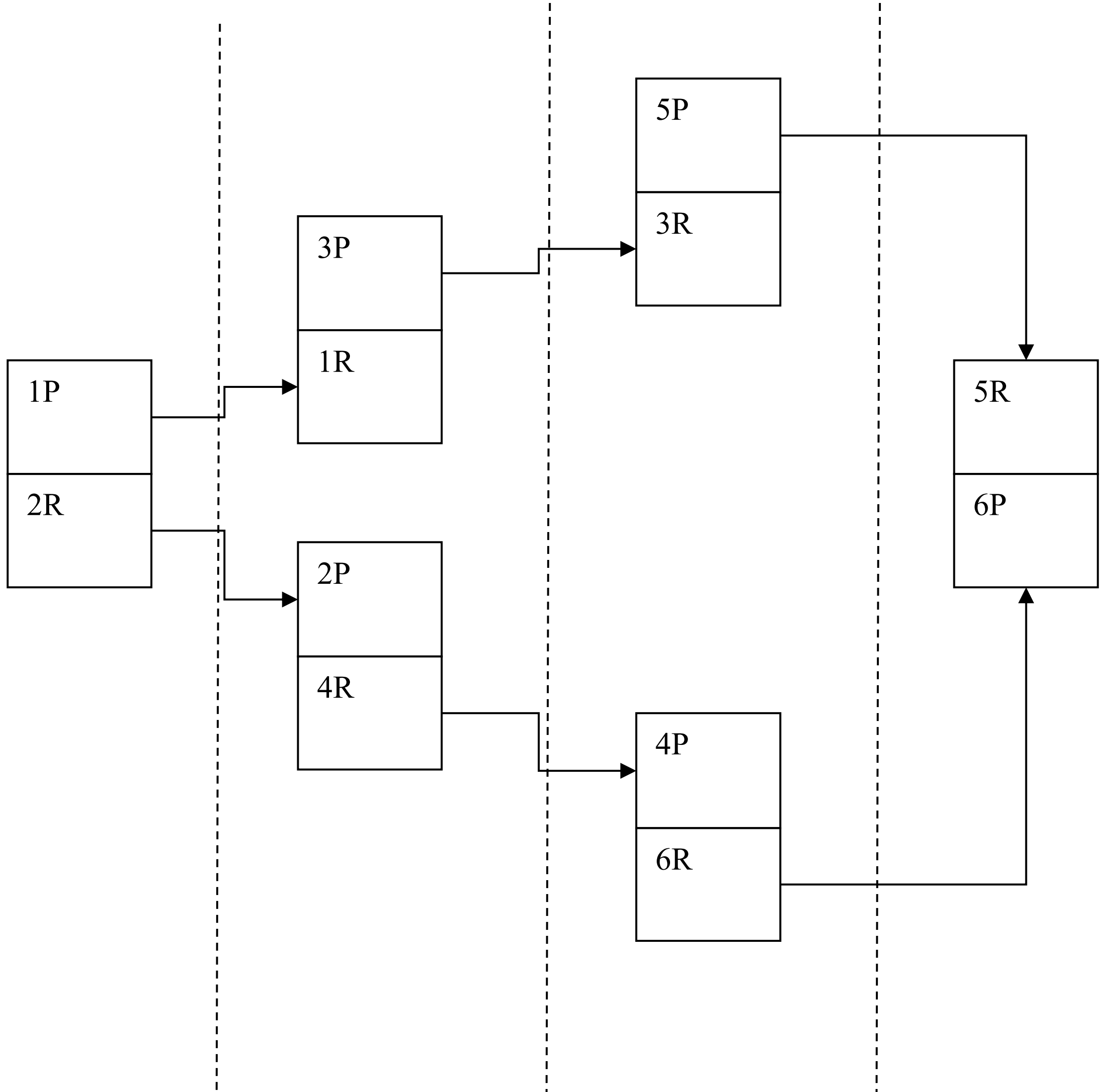
- **In our pilot**, we find a significant difference between
    - the total payoff of a player who begins as P and ends as R

      (median *s*: 4/10) and
    - the total payoff of a player who begins as R and ends as a P

      (median *s*: 2/10)

→ It suggests that the idea of fairness derives from the initial position



Our explanation

- Fehr and Schmidt (1999)'s model on inequality aversion: "they are willing to give up some material payoff to move in the direction of more equitable outcomes"

- In their simplest formulation, with two players, say x and y, the utility of an individual x is:
- $U_x = \pi_x - \alpha_x max\left[\left(\pi_y - \pi_x\right), 0\right] - \beta_x max\left[\left(\pi_x - \pi_y\right), 0\right]$

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  - Disadvantageous inequality: the individual x experiences inequity if s/he is *worse off* than the other player y, namely if $(\pi_y - \pi_x)$ is no null

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  - Advantageous inequality: S/he also feels inequity if s/he is *better off* than the other player, namely if $(\pi_x - \pi_y)$ is no null

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- $U_x = \pi_x - \boxed{\alpha_x max[(\pi_y - \pi_x), 0]} - \beta_x max[(\pi_x - \pi_y), 0]$

- The player who begins as R will form his/her idea of fairness on the disadvantageous inequality because s/he will experience that inequality in the first period
- Anchoring effect: And s/he applies the same idea of fairness when s/he becomes a P

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Conclusions

- Initial positions do matter for the emergence and the formation of the idea of fairness
- Implications that go well beyond experimental game theory
  - In a market transaction, if one individual begins as buyer, then s/he can have an idea of fairness which is different from an individual who begins as seller
  - In a transaction within a firm à la Coase (1937), if one individual begins as subordinate (e.g., worker), then s/he can have an idea of fairness which is different from an individual who begins as boss (e.g., entrepreneur)