Misperceiving Mechanisms

Daniel Martin and Edwin Muñoz-Rodriguez

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Mechanism
Design

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| Mechanism Design | Imperfect Perception | Contingent Thinking |

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Auctions It **spares** "participants the need for elaborate strategic **calculations**" (Milgrom 2004).

Failures to play dominant strategies in mechanisms:

- Second price auctions (Kagel, Harstad, and Levin 1987).
- DA algorithms (Hassidim et al. 2017).
- BDM mechanism (Cason and Plott 2014).
- Pivotal mechanisms (Chen 2008).

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- Examples: Cason and Plott (2014), Li (2017).

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- Use to model perception of a mechanism's extensive form:
  - Receive noisy mental signal of mechanisms they think they are facing.

First Step

Apply the model of misperception
to a simple mechanism of wide use

BDM mechanism

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    - Model assumption: People could potentially confuse BDM with FPA.

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Prediction. As cost of processing information decreases, average bid decreases.

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  - **Computational complexity** of the problem is related to the set of contingencies that need to be considered. (Martinez-Marquina, Niederle, and Vespa 2017).
  - **Contingent protocol**: Payoffs to each action are specified contingency by contingency (Esponda and Vespa 2014).
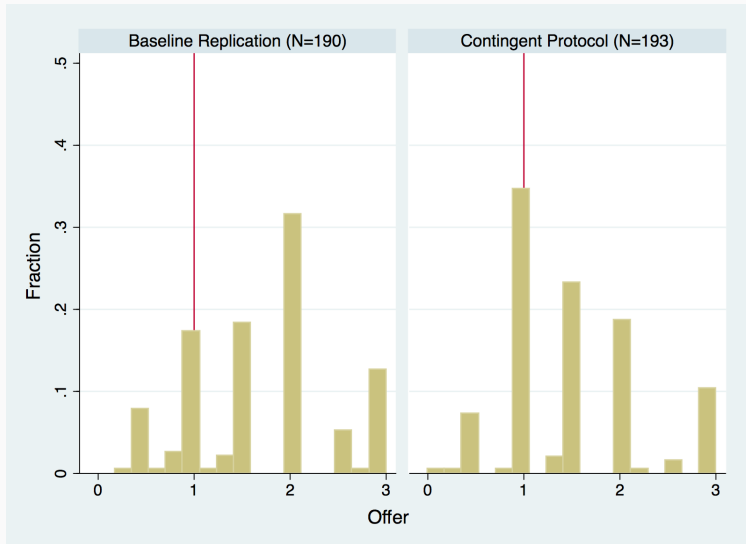
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- **Alternative explanations** for choice mistakes in the BDM do not provide an answer for the observed reduction.
  - Endowment effect, positive feelings from ownership, anchoring or attraction to the maximum possible payoff, bad deal aversion, and the buy-low sell-high heuristic.

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- This reduction is plausibly associated with a reduction in misperception.

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    - Map the information cost to features of the mechanism that can be designed.

Thank you!