

Do preferences and beliefs in dilemma games exhibit complementarity?

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QI15

Introduction

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- Work in progress. Some problems, advice needed!

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 - The experiment
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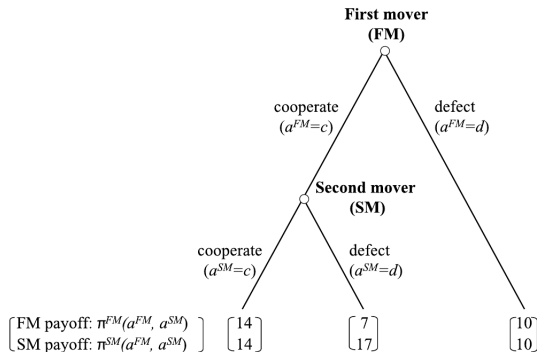
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<i>Treatment</i>	<i>Baseline</i>	<i>Elicit_Beliefs</i>	<i>True_Distribution</i>
Task 1	2nd move	2nd move	2nd move
Feedback (a_{-i}^{SM})	No	No	Yes
Task 2	1st move	beliefs (a_{-i}^{SM})	1st move
Task 3	beliefs (a_{-i}^{FM})	1st move	beliefs (a_{-i}^{FM})
N. Participants	40	60	60

FM and SM correlation

FMCR and SMCR

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- Positive correlation
- Significant in all conditions
- Discussed in original paper

Consensus effect

SMCR and beliefs

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SMCR and beliefs

- Beliefs are biased towards actions (driven by preferences)
- Focus of original paper
- Seen as social projection by Busemeyer & Pothos (2012), suitable for a quantum model

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- Equivalent to full information
- Measurement influences the system

The measurements

- FM measurement $\rightarrow \{|a_C^{FM}\rangle, |a_D^{FM}\rangle\}$
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- Build the Hilbert Space by modeling the three effects

Three effects revisited

FM & SM correlation:

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FM & SM correlation:

- Classical correlation, can be measured at the same time
- In \mathbb{H}^4 spanned $\{|a_i^{FM}\rangle \otimes |a_j^{SM}\rangle\}$
- Not unlike Pothos and Busemeyer (2009)

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This tensoring also defines the belief base of $\mathbb{H}^{CE} \otimes \mathbb{H}^{RP}$.

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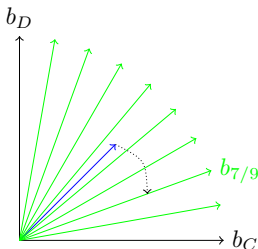
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 - 'estimates the probability a player thinks his opponent will cooperate or defect' (does this work?)
- \rightarrow Beliefbasis (and \mathbb{H}^{CE} and \mathbb{H}^{RP}) 2 dimensional
- EX: Player thinks 7 opponents cooperate:



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- SM action is associated with the planes $|a_i^{FM}\rangle \otimes |a_C^{SM}\rangle$ and $|a_i^{FM}\rangle \otimes |a_D^{SM}\rangle$.
- In \mathbb{H}^4 we have 2 orthogonal planes B_C en B_D .
- Bundle of planes spanned by B_C and B_D , contains the planes associated with belief measurement.

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- Relation between beliefs and actions are modeled by the angles between the beliefplanes and actionplanes.
- Fit is promising:

