SIPF
Società Italiana di Psicofisiologia e Neuroscienze Cognitive

SIPF Congress
November 9-11, 2023 - Siena

Cortical circuits guiding costly prosocial preference

Alessandro Mazza

(Università degli Studi di Torino)

Prosociality and Altruism

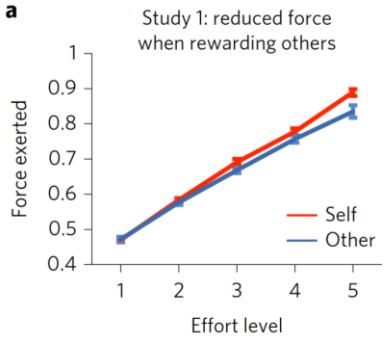
Prosocial behaviors

Altruistic behaviors

(Pfattheicher et al., 2022)

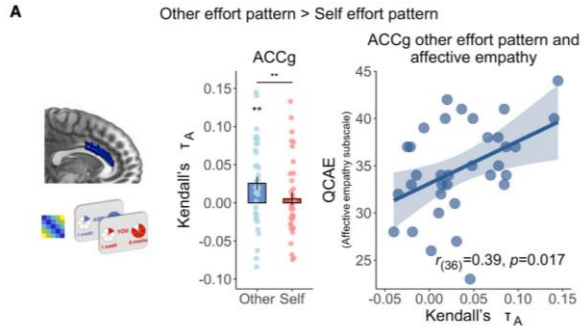
Research questions

Larger physical effort discount for others



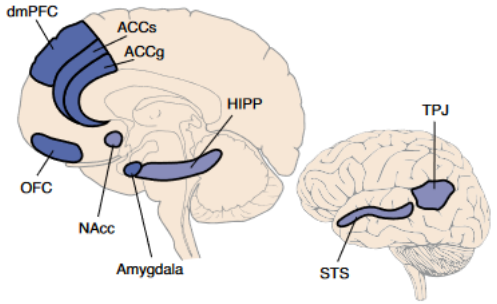
(Lockwood et al., 2017)

ACC guides prosocial choices



(Lockwood et al., 2022)

Social-brain areas



(Ganghopadyay et al., 2021)

Is **effort discount** generalizable to cognitive domain?

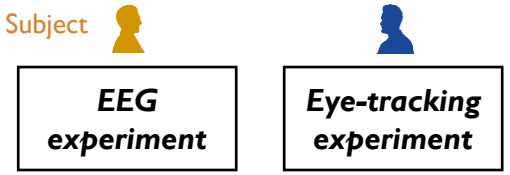
Do **social-brain** areas differently encode altruistic vs self-benefitting choices?

How do different areas **dynamically interact** when engaging in altruistic choices?

Experimental design

Meeting before experiment

"Random" assigment



Start session

Recipient

Effort

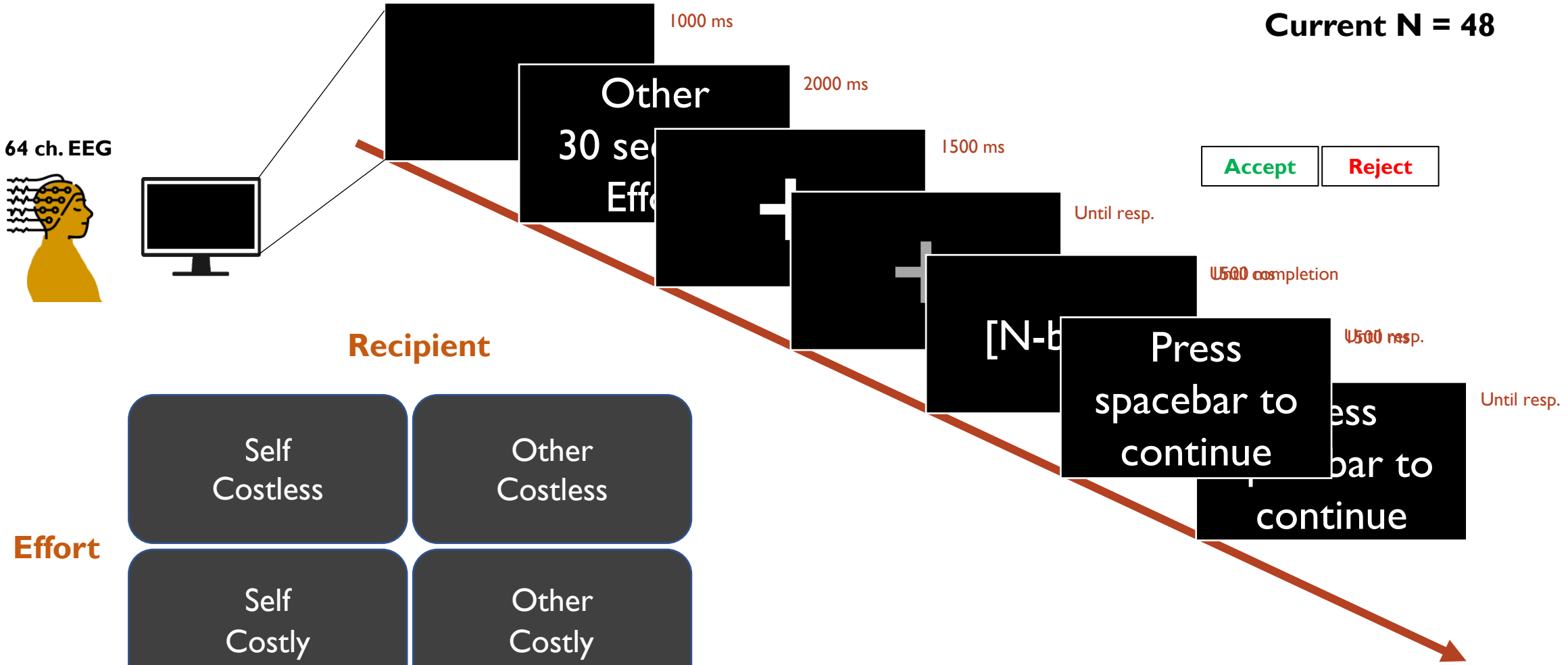
Self Costless	Other Costless
Self Costly	Other Costly

- Accept or reject offers
- Reward = time reduction

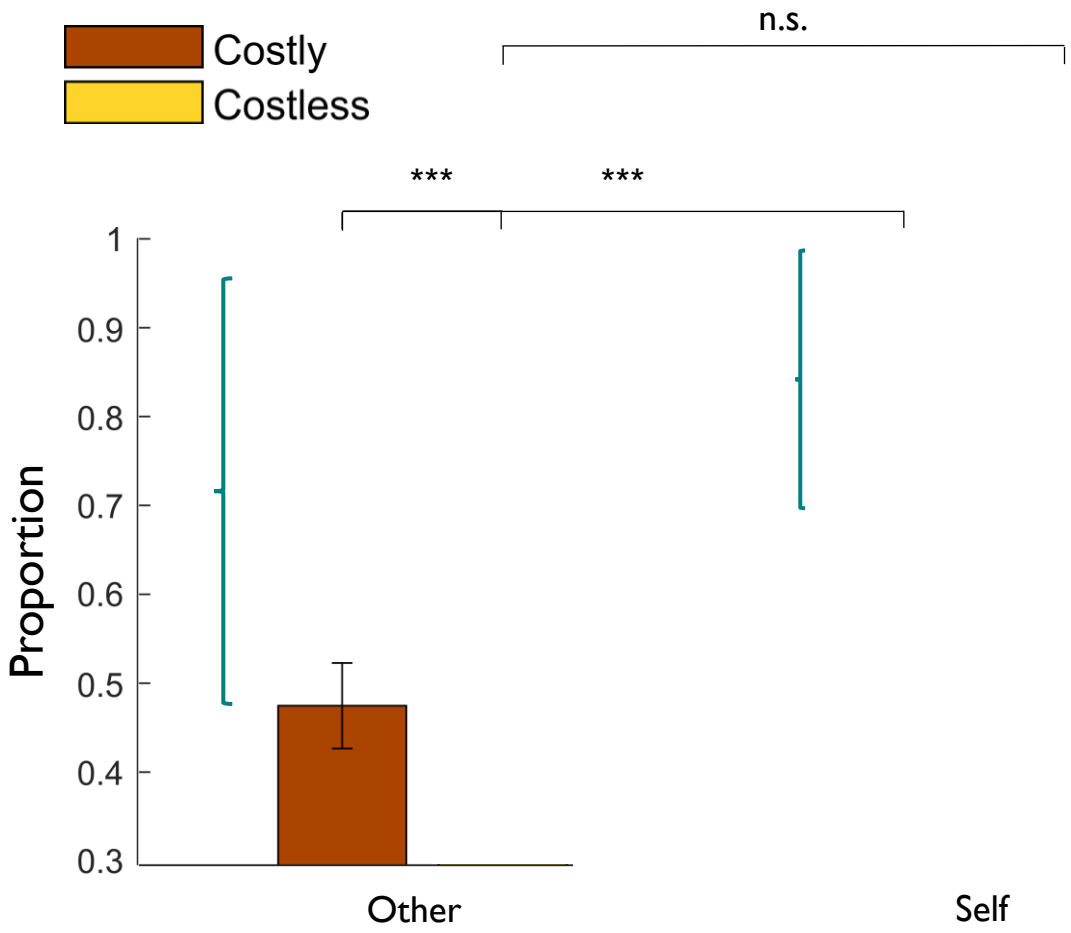
The task

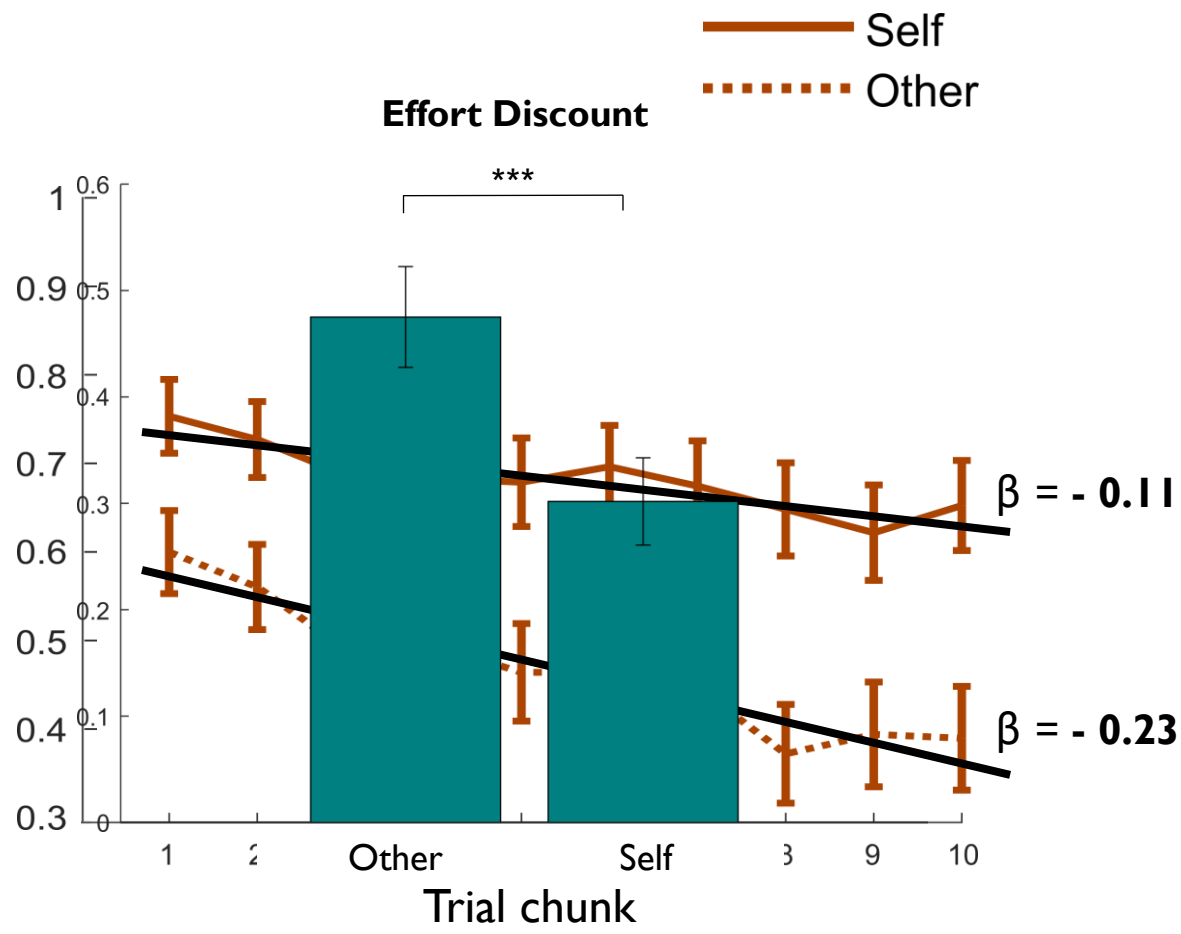
Tot. 200 trials - 50 per condition

Current N = 48

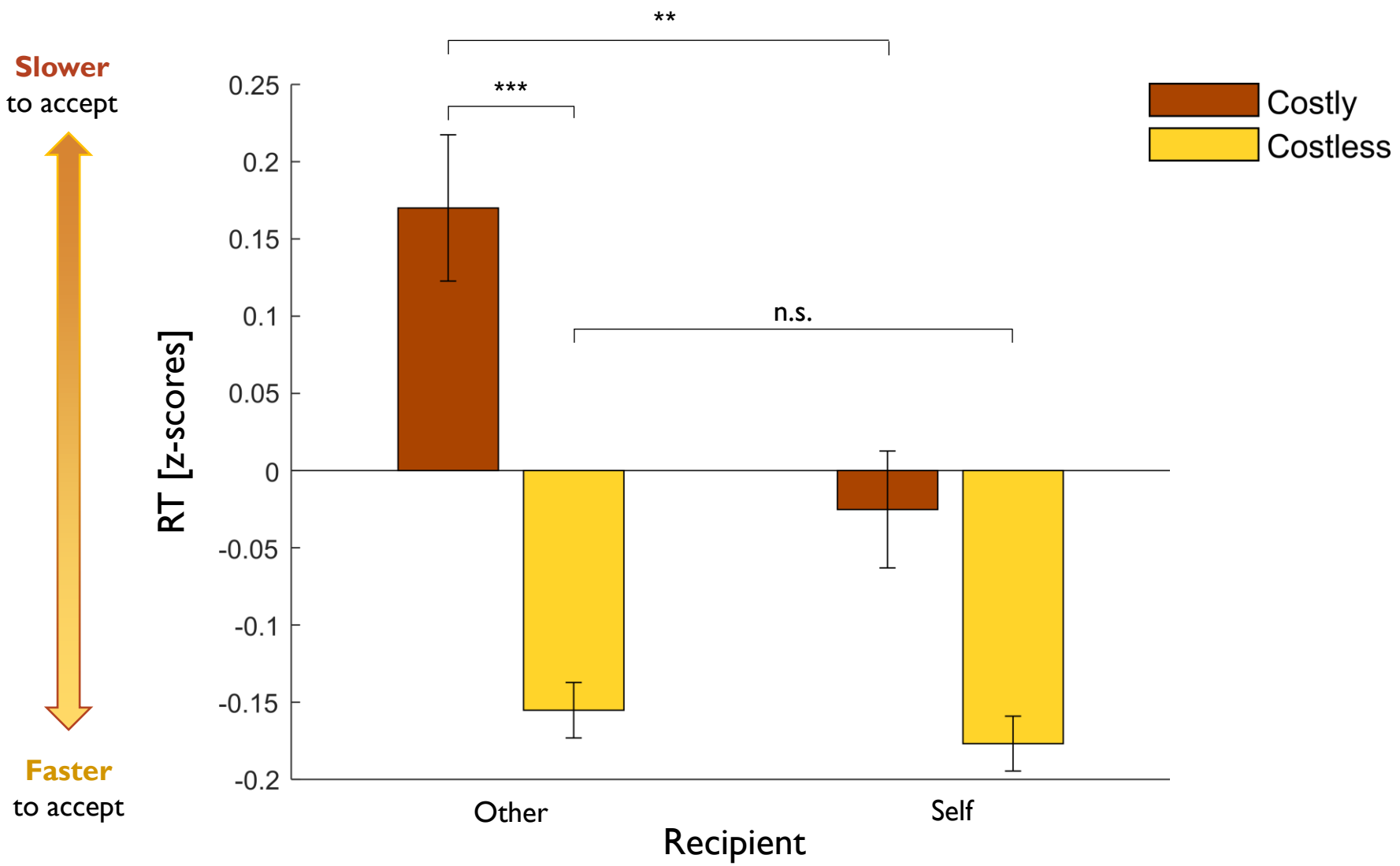


Acceptance rate

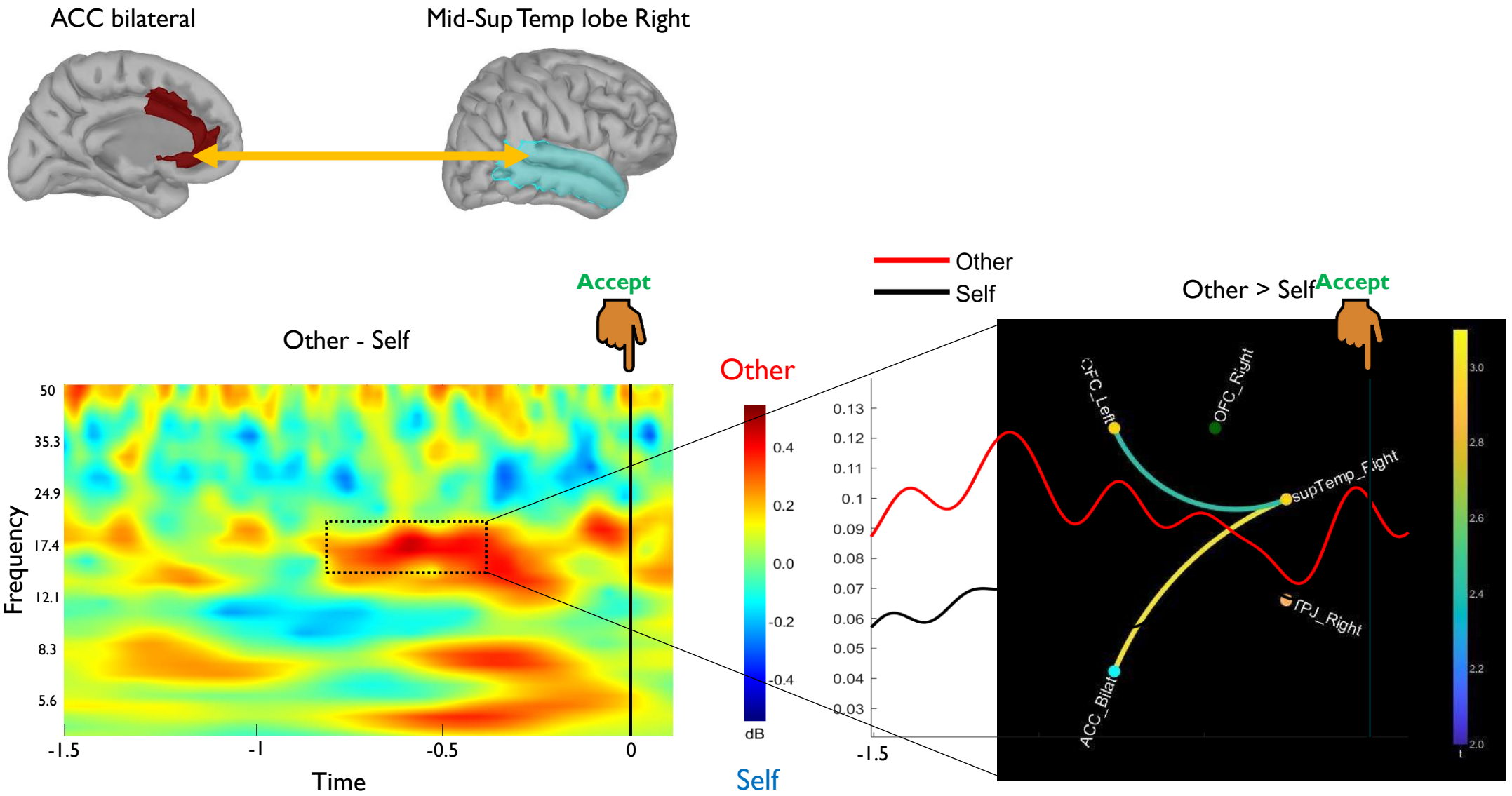




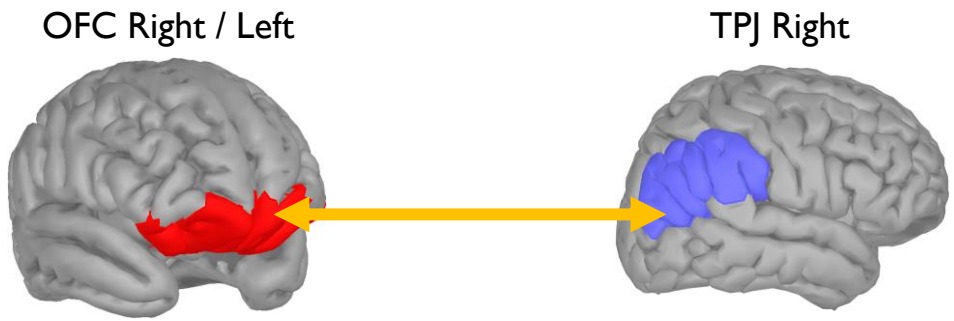
Response times

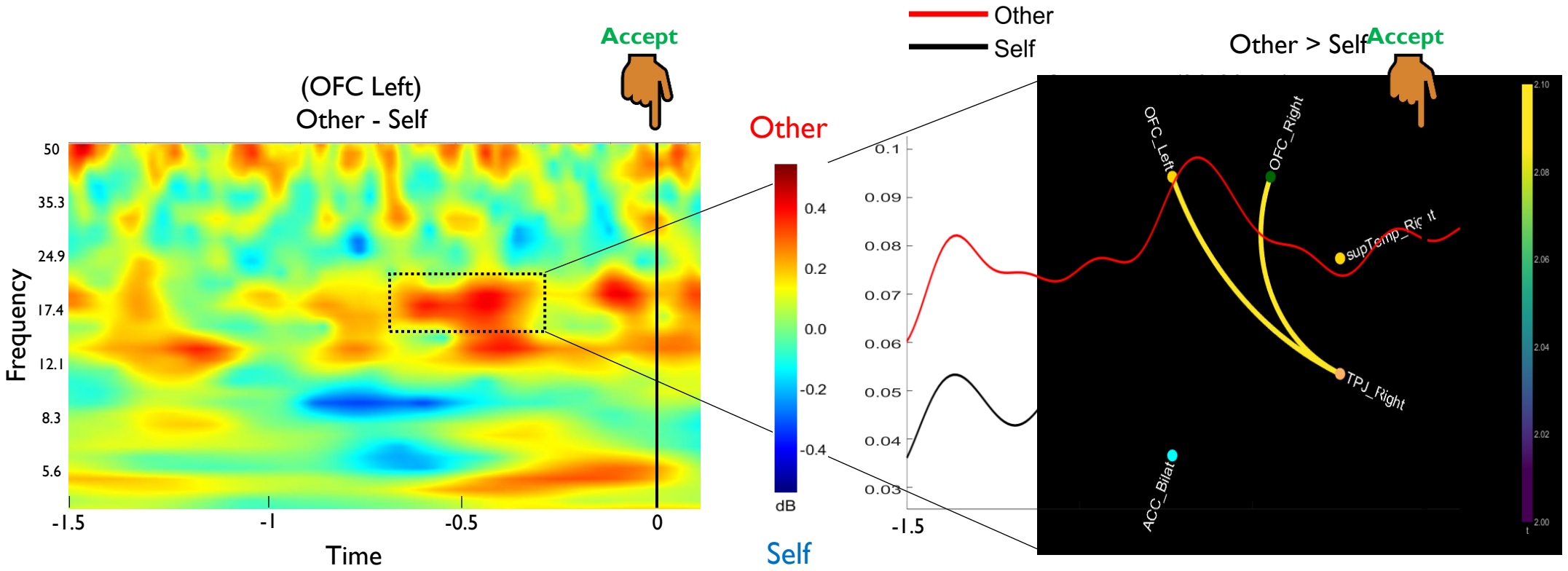


EEG patterns: ACC



EEG patterns: OFC





Conclusion

Behavioral results indicate that:

- Effort discount effects on altruism **are generalizable** to the cognitive domain
- People are also **slower** in engaging in prosocial behaviors when effort is required

Preliminary EEG analyses suggest that:

- The role of ACC in driving **altruistic choices** is confirmed, possibly thanks to the influence of specific social-brain areas
- Altruistic choices might also be driven by the influence of **social-brain areas** (rTPJ) over areas deputed to options valuation (OFC)

Thank you for your attention!

… and thanks to my lab mates and mentor:


Alessandro Valvo


Ilaria Mirlisenna


Marta Campagnola


Olga Dal Monte

Contact: alessandro.mazza@unito.it