Contribution ID: **516** Type: **Poster**

Negotiation under the lens: individual differences and brain-to-brain synchronization explored with fNIRS hyperscanning

Thursday, September 11, 2025 2:10 PM (20 minutes)

Negotiation plays a crucial role in reaching mutually beneficial agreement during shared decision-making. In neuroscience, hyperscanning paradigm allows to grasp the complexity of brain dynamics during such complex interactions. This study used functional Near Infrared Spectroscopy (fNIRS) hyperscanning to investigate brain-to-brain synchronization during interactive negotiation, and explored individual differences' impact on this process. 13 homologous dyads of Speaker A and B participated in a shared decision-making task involving negotiation. The task included three steps: Individual Decision-Making Step (InDec-step), where participants individually selected one statement that best expressed their perspective; Cooperation Step (Coop-step), involving collaborative negotiation; and Reaching an Agreement step (Agr-step), where mutual agreement was reached. Participants completed the General Decision-Making Style, the Maximization Scale and the Big Five Inventory scales. Inter-brain neural activity was recorded using fNIRS hyperscanning during the baseline and the task. Results revealed higher dissimilarity in deoxygenated hemoglobin (HHb) levels during the condition in which B was speaking and Speaker A was listening, suggesting that the two participants experienced different levels of cognitive demand during the interaction, or that Speaker A may have been attempting to assert his own perspective. Moreover, HHb dissimilarity in the left hemisphere during the Agrstep negatively correlated with the avoidant decision-making style, the tendency to search for alternatives, and the decision-making difficulties subscale. Similarly, during the Indstep and Coopstep, a negative correlation emerged with the extraversion trait. These findings reveal that brain synchronization in negotiation is sensitive to both conversational roles and individual differences in personality and decision-making profiles.

If you're submitting a symposium talk, what's the symposium title?

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

No

Primary author: DAFFINÀ, Angelica (Università Cattolica del Sacro Cuore di Milano)

Co-authors: Dr ANGIOLETTI, Laura (Università Cattolica del Sacro Cuore, Milano, Italia); Dr ACCONITO, Carlotta (Università Cattolica del Sacro Cuore); SAQUELLA, Federica (Università degli Studi di Milano); Prof. BALCONI, Michela (1-International research center for Cognitive Applied Neuroscience (IrcCAN), Faculty of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy; 2-Research Unit in Affective and Social Neuroscience, Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy)

Presenter: DAFFINÀ, Angelica (Università Cattolica del Sacro Cuore di Milano)

Session Classification: Lunch and poster 1

Track Classification: Social cognition