



**University of
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Department of Economics – Neuroeconomics Seminar

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Belief Updating in Social Contexts: From Eye Gaze to Empathic Preferences

Social behaviours and decisions are dynamically shaped by social signals received from others, ranging from basic cues such as social presence and eye gaze to more complex signals conveying social preferences. Understanding how these cues influence social emotions and motivation is critical for addressing maladaptive social behaviours. In this presentation, I will discuss recent research examining how virtual and real social presence, as well as learning from different social cues, shape motivation and behaviour. First, I present a series of studies showing that virtual social presence can reduce autonomic fear responses, even when virtual characters are abstract rather than human-like. Second, I share evidence demonstrating that both basic signals, such as eye gaze, and higher-level cues, such as observing others' social preferences, elicit learning signals in the form of prediction errors that shape social closeness and empathy. Specifically, results from the first study reveal that social learning is triggered by others' eye-gaze patterns, leading to updates in perceived social closeness and emotional responses toward an interaction partner. A second study shows that observing preferences for empathic versus non-empathic behaviour induces learning that alters observers' empathic responses, as reflected in changes in empathy ratings and associated functional connectivity. Overall, this work highlights how even subtle social signals—whether virtual or real—shape emotional and motivational processes, thereby updating preferences and beliefs.