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Complex coordination: How power dynamics and task demands shape interpersonal motor synchrony

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Abstract

Interpersonal coordination describes how we change our movements and speech patterns as a result of our interaction with others. Recent research has begun to understand interpersonal coordination as an phenomenon that emerges from interactiona complex adaptive system for which different initial conditions and contextual constraints may alter the form and function of coordination. In this project, we explore the effects of two different constraints on the emergence of interpersonal motor synchrony in dyadic interactions of native Korean speakers: power dynamics and task instructions. Specifically, we analyze a corpus of interactions that differ by power dynamics (i.e., friend-to-friend or professor-to-student) as well as task (i.e., friendly conversation, directed role-play, storytelling, or problem-solving). Video recordings of these interactions were analyzed using computer vision algorithms and a nonlinear dynamical systems analysis methodcross-recurrence quantification analysisto characterize how the interpersonal system responds to these simultaneous contextual constraints.