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A systematic investigation into team coordination breakdowns

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Abstract

A critically understudied aspect of team adaptation is the phenomenon of coordination breakdowns (CBs). CBs are characterized by a temporarily diminished ability to function effectively as a team. However, team research currently lacks robust methods for identifying and anticipating when teams transition from functioning effectively to a CB. With the current study, we aim to deepen our understanding of how team coordination dynamics across various interaction modalities reflect CBs and effective teamwork, utilizing a three-pronged research approach. First, we used audiovisual data from four person teams involved in a stressful collaborative game task to manually identify CBs. Second, we applied team coordination dynamics measures to physiological and speech data obtained during the task to computationally identify CBs. Third, the latter output was used as input for transition anticipation methods, generating computationally anticipated CBs. Our findings contribute theoretically and methodologically to the systematic investigation of CBs.