

# **Prosody, Action, and Coordination in Real-time Gameplay**

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Language is invaluable for real-time coordination of action. We are studying this in a corpus of fast-paced games in which pairs of players cooperate to solve a maze with obstacles and puzzles. The players routinely perform astounding feats of communication, rapidly producing utterances which simultaneously convey multiple dimensions of semantic and pragmatic information, and which are adapted continuously as the game state and dialog state change. To investigate, we applied unsupervised methods to discover the most common patterns, considering both prosodic features and game-action features. We found superimposable behavior patterns that involve both language acts and domain actions, and that are comprised of synchronized contributions by both players. These phenomena and patterns pose challenges for many current theories, models, and technologies.