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Associations Between Cognitive Performance and Extreme Expertise in Different Competitive eSports

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Abstract

Video gaming and competitive eSports have garnered increased empirical attention, although a knowledge gap persists concerning the cognitive underpinnings of performance in individual gaming genres. Like traditional sports players, eSports players require genre-specific skillsets that depend upon distinct cognitive constructs to perform well in their genre. We examined the relations between high-level expertise in different eSports and performance on several cognitive assessments to isolate the processes that most directly support top-level competitive gaming performance. Top-level experts of Fighting and Rhythm game genres outperformed Non-video-game-players on measures of reaction time, paced motor timing, and sustained attention. Fighting Game Experts performed particularly well with sustained attention, and Rhythm Game Experts performed particularly well at paced motor timing. Expert groups did not dramatically differ from one another, suggesting relations with more general gaming expertise rather than game-specific expertise. This research provides preliminary explanation for how genre-specific video game expertise interacts with cognition.