

THE PROCESSES UNDERLYING 'GAME INTELLIGENCE' SKILLS IN SOCCER PLAYERS

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Introduction

'Game intelligence' skills such as anticipation and decision-making play a crucial role in expert performance. The ability of players to anticipate opponents' intentions and to make appropriate decisions is reliant on a number of processes related to perception and cognition (Williams et al., 2010). A multidimensional research approach was employed to examine these mediating processes during a representative task in soccer. Skill-based differences were expected for all outcome and process measures.

Methods

A total of 48 (24 skilled and 24 less skilled) adult soccer players moved and interacted with life-size sequences of 11 versus 11 soccer situations filmed from the perspective of a central defender, which were occluded at a key moment. The accuracy of anticipation and decision-making judgments at occlusion were recorded across two experiments, as well as process measures of performance including eye-movement data and retrospective verbal reports of thoughts.

Results & Discussion

Skilled players recorded higher accuracy scores compared with their less-skilled counterparts for anticipation ($M = 68.8\%$ vs. 36.2%) and decision making ($M = 81.8\%$ vs. 49.9%). The skill-based differences in judgment were underpinned by differences in visual search strategy. Skilled players made more frequent fixations of shorter duration to more disparate and informative locations of the display than less skilled players. They also generated a greater number of verbal report statements, which demonstrate a more advanced domain-specific memory representation of the current game situation, compared with the less skilled. Our findings support and extend previous work (e.g., Williams et al., 2010) and highlight how the perceptual-cognitive processes operate so as to determine superior anticipation and decision-making performance in soccer.

Conclusion

The skilled players' superior performance was underpinned by quantitatively different underlying processes, which appear to be crucial in facilitating successful anticipation and decision-making judgments under time constraint. A number of practical implications are discussed.

References

1. Williams, A. M. et al. (2010). *Appl Cogn Psychol*, doi: 10.1002/acp.1710