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# Perceptual-cognitive processes underlying creativity in skilled soccer players

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## Introduction

*Creativity* is a divergent thinking ability to produce varying, original, and flexible solutions across different situational contexts (Memmert et al., 2007). It forms a key part of expert performance in soccer and other domains. The aim of this study was to determine the underlying perceptual and cognitive processes that underpin superior creative performance in soccer players.

## Methods

Forty skilled adult soccer players participated. In the experimental task they viewed life-size video of 11 *vs.* 11 attacking situations whilst in possession of a ball. Clips were occluded at a key moment and they were required to play the ball in response to each situation. Moreover, they were required to verbalize the additional actions they could execute for each situation. Their solutions on the task were measured using the three observation criteria for creativity of originality, flexibility, and fluency of decisions. Players were categorized using these criteria into either more- or less-creative groups. Visual search and cognitive processes were recorded during the task using a portable eye-movement registration system and retrospective verbal reports, respectively.

## Results & Discussion

The creativity-based between-group differences in decision making were underpinned by differences in visual search strategy. Creative players made more fixations of shorter duration in a different sequential order and towards more informative locations of the display compared with less-creative players, indicating a broader attentional focus. They generated a greater number of verbal report statements related to assessment of the current situation and planning of future actions when compared with the less-creative players. Our findings highlight the perceptual-cognitive processes underlying superior creative performance in soccer.

## Conclusion

Creative performance in soccer players is underpinned by perceptual-cognitive processes that appear to be crucial in facilitating more novel solutions.

## References

Memmert, D. et al. (2007). *J Sports Sci*, 25(12): 1423-1432.

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