

CONSTRAINTS ON PLAYER INTER-PERSONAL COORDINATION IN FUTSAL

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Introduction

In complex systems analyses of 1v1 sub phases of team sports, interpersonal distance (IP) has been revealed as a reliable variable that leads an attacker-defender dyadic system to a critical region, with a transition towards one of two possible coordination patterns: a successful dribble or a ball interception (Passos, et al., 2008). In this study we examined whether the specific location of the goal and ball might influence the IP of attacker-defender dyads. We also studied how the IP of attackers and defenders in ball-carrying dyads constrained actions of teammates.

Methods

Thirteen goal sequences from all ten futsal games in the 2009 Lusophony Games involving seventy-one players ($M=25.31$, $SD=4.73$ years) were selected for analysis. Displacement trajectories of players and ball were digitized (Duarte, et al., 2010) from 52 outfield attacker-defender dyadic system interactions, of which 13 involved ball possession by an attacking player. The coordination state was measure by relative phase (in-phase - 0° ; anti-phase - 180° , see Palut & Zanone, 2005) between: IP of each attacker to the nearest defender and the attacker's distance (i) to the goal and (ii) to the ball; and IP of the ball carrier to the nearest defender and the ball carrier's distance to the (iii) 1st, (iv) 2nd and (v) 3rd teammates.

Results & Discussion

Although the IP of the attackers to the nearest defenders showed in-phase patterns of coordination with the attacker's distances to the goal (23%), a -60 degrees pattern of coordination emerged with the attacker's distances to the ball (18%). The IP of the ball-carrier to the nearest defender showed weaker in-phase patterns of coordination with the 1st (14% at 60°), the 2nd (14% at 0°) and the 3rd (14% at 0°) teammates.

Conclusions

The attackers' distances to the goal and to the ball, and the defenders' distances to the ball carrier were shown to be key sources of information that constrained inter-personal coordination of players in competitive futsal performance.

References

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