

INTERPERSONAL COORDINATION PATTERNS AND BALL DYNAMICS IN FUTSAL

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Introduction

In team sports, the continuous cooperation and competition between players produces complex relationships that produce specific coordination patterns of game behavior [1]. The ball constrains players' behaviors as the players attempt to meet their dual aims of scoring and preventing goals. In this study we aimed to identify dynamic patterns of coordination between players and the ball, as well as between players in 5-vs-4+GK sub-phases of futsal.

Methods

Fifteen male senior players of the National Futsal University Team in Portugal were grouped into three teams of five players each ($M = 23.25 \pm 1.96$ years). Twenty one trials ending with a shot at goal were considered. Players' and ball motion was captured by a single digital video camera and digitized using TACTO software (see procedures in [2]). The relative phasing of the time series data in the lateral and longitudinal directions were obtained using Hilbert transform [3].

Results & Discussion

Relative phase histograms showed that the defender-ball pairings revealed the highest attraction towards in-phase in both lateral and longitudinal directions. Compared to defenders, the attackers showed weaker attractions for all paired relations. Furthermore, the players' specific field positions seemed to constrain the type and strength of couplings between playing dyads. Lateral displacements revealed higher attraction to in-phase coordination than longitudinal displacements.

Conclusion

The data suggested that variability of phase relations is important to achieve for attacking players but not for defending players. Instead, the defenders seemed to prefer stabilized in-phase relations, especially in the lateral direction. The ball's dynamics also constitute an important constraint on defenders' behaviors. Playing positions and team strategies may additionally constrain team pattern formations.

References

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