Pattern Recognition in Soccer: Perceptions of Skilled Players and Experienced Coaches

James Feist[1], Oliver R. Runswick[2], Ed Hope[3], Jamie S. North[4], & Chris Pocock[1]

[1]Institute of Sport, Nursing and Allied Health, University of Chichester, U.K.
[2]Department of Psychology, Institute of Psychiatry, Psychology & Neuroscience, King's College London, U.K.
[3]School of Sport, Rehabilitation and Exercise Sciences, University of Essex, U.K.
[4]Faculty of Sport, Allied Health and Performance Science, St Mary's University, Twickenham, U.K.

Introduction

- The ability to perceive and recognise patterns between opposition players is a perceptual-cognitive skill that contributes to a soccer player's ability to 'read the game' (Den Hartigh et al., 2018)

- Laboratory-based experimental research has shown that skilled defenders rely on relations between centrally located attacking players as well as the player in possession of the ball to support pattern recognition (e.g., North et al., 2017)

- Current lack of qualitative research into _how_ skilled soccer players 'read the game' and what the players themselves understand to be important when recognising patterns of play
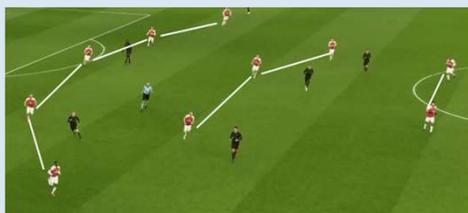
Aim

To understand how skilled soccer defenders and experienced coaches perceive the importance of pattern recognition to 'game reading' in soccer

Methods

Six skilled soccer central defenders (3 male; 3 female) and seven experienced male UEFA 'B' and UEFA 'A' coaches were interviewed

Player	Age	Years of Playing Experience	Highest Level of Soccer Played	Current Playing Level
1	19	12	Academy	Semi-Pro
2	26	16	International	Professional
3	18	10	Academy	US College
4	32	20	International	Professional
5	25	17	Academy	Semi-Pro
6	19	10	Professional	Professional

| Coach	Age	Years of Coaching Experience	Highest Level of Soccer Coached	Current Coaching Level
1	38	21	Academy	Academy
2	49	31	Semi-Pro	Semi-Pro
3	40	23	Women's Championship	Women's Championship
4	38	23	Semi-Pro	Semi-Pro
5	36	20	Academy	Academy
6	65	22	Academy	Semi-Pro
7	36	22	Women's Super League	Academy

Key Findings
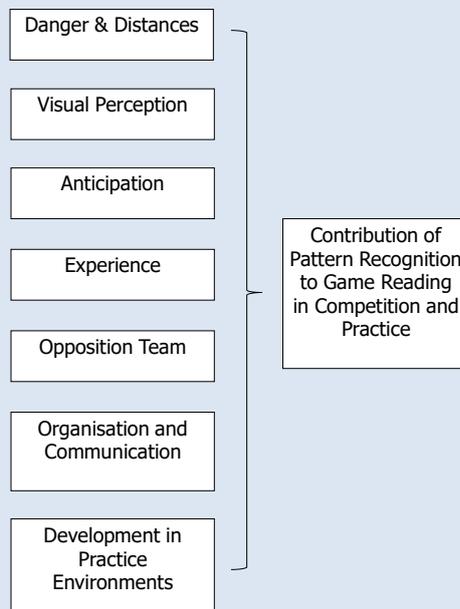
Figure 1. Thematic map of the contribution of pattern recognition to game reading in competition and practice, from the perspectives of skilled soccer central defenders and experienced coaches.

Participants described the 'triggers' that underpin pattern recognition in competition:

"I'll see his head come up and his foot go back, he's going to play the ball... Analysing their striker's movement, it's just that really quick decision-making, recognising that pattern of play and where they're going to ultimately try to exploit" (P1)

"I'm looking at how deep the back line is. I'm looking at where the ball is, I'm looking at our shape. Are we narrow and compact? Are we cutting channel balls out, are we checking shoulders and picking up runners?" (P4)

"I think it comes down to them [central defenders] to understand if there's a trigger or pattern happening, but they've got to see that early" (C7)

"I think it depends on teams, playing styles and the opposition that you're faced with... it depends on a team's formation, setup, philosophy" (C1)

Practice Environments

- Participants explained that developing pattern recognition skills in representative practice environments was perceived to be beneficial:

"For me it was doing stuff at match pace. In a small-sided game or attack vs defence was really beneficial, because not only then could you get to recognise patterns, but you also get an understanding with your teammates" (P2)

- Modified games (i.e., attack vs defence) replicating future oppositions' attacking movement patterns may help to develop game reading and pattern recognition skill

Practical Implications

- Using experiential knowledge of players and coaches to further understand pattern recognition skill

- Coaches are encouraged to design practice environments for central defenders which stimulate problem-solving and promote familiarity with an opposition team's patterns of play

- Small sided games can expose central defenders to a high repetition of frequently occurring micro-patterns (i.e., 2v2, 3v3) that occur in 11v11 matches

Future Research

- Advances in virtual reality and adopting more in-situ designs provide opportunities to further understand pattern recognition skill from representative viewing perspectives

References

- Den Hartigh, R. J., Van Der Steen, S., Hakvoort, B., Frencken, W. G., & Lemmink, K. A. (2018). Differences in game reading between selected and non-selected youth soccer players. _Journal of Sports Sciences, 36_(4), 422-428.
- North, J. S., Hope, E., & Williams, A. M. (2017). Identifying the micro-relations underpinning familiarity detection in dynamic displays containing multiple objects. _Frontiers in Psychology, 8_, 1-8.