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PREPARING FOR HOME AND AWAY MATCHES

SANDY WOLFSON and NICK NEAVE

Coaches, players, and certainly bookies are well aware of the fact that football teams typically perform better at home than away. The end of year statistics for various leagues during the 2002-2003 football season in the UK (see Table 1) show a remarkably consistent tendency for teams to win more games and score more goals when playing on their own pitch. Such trends occur worldwide, over many seasons, at all levels and in a wide range of team sports such as rugby, major league baseball, ice hockey, basketball and American football.

In the Premiership this past season, 65% of the total wins took place at home venues, and this figure was similar regardless of teams' final league positions. For example, the champions Manchester United achieved 64% of its 25 wins at home, while the team with the fewest points (Sunderland) obtained 75% of its four wins at home. No Premiership team achieved fewer than 50% of its total wins at home. Equivalent statistics can be found across other top European leagues, with 64% of wins occurring at home in the Spanish Primera Liga, 68% in the French Division 1, 63% in the German Bundesliga, and 67% in the Italian Serie A.

At international level, where matches may be played at home, at the opponent's venue, or in neutral territory, the home advantage remains strong. Of 68 countries playing competitive matches last year, an average of 55% of the wins occurred at home, 25% at the opponent's grounds, and 20% on neutral territory. It is also interesting to note that England (1966) and France (1998) have won the World Cup only once each, and on both occasions the tournament was held on the victor's home soil. Similarly, the United States in 1994 and Japan and South Korea in 2002 both fared much better than their rankings would have predicted when the World Cup was held in their countries. South Korea had never won a match in the World Cup finals until, as co-hosts, the team won four of its seven matches.

The estimate is that the home advantage effect is worth around half a goal per match. Yet, despite the fact that the venue yields such an enormous influence on results, surprisingly little has been concluded about its causes, and preparation in the context of its effects is often ignored.

CAUSES OF HOME ADVANTAGE

A popular belief is that the home crowd exerts a strong positive influence on footballers by inspiring and encouraging them to play well, boosting

their confidence, or pressuring them into playing in an entertaining, attacking style. However, neither the size of the crowd nor its density (percentage capacity full) correlates with the home advantage. In fact, last season the Premiership team with the best relative home record (Aston Villa, of whose 12 victories, 11 occurred at home) actually had the lowest average density (82% of capacity) of all Premiership clubs.

Players often report feeling more confident when in front of a vocal and supportive home crowd, and it has been noted that American football teams who play in a domed stadium show an inflated home advantage, presumably because of the reverberating crowd noise. Still, some studies have found no relationships between cheering and performance, and a few have even noted a negative effect. Research suggests that pressure from the home crowd to perform well may become distracting and anxiety-provoking, particularly during critical matches. Performers tested in laboratory settings appear to believe that their performance has been improved by supportive audiences, whereas they have actually performed better in the presence of unsupportive bystanders.

While the effects of supporters on the home team may vary, their impact on the referee could be more systematic. It is difficult to imagine that a referee observing an ambiguous tackle by a visitor in the penalty area at Old Trafford would fail to be influenced by a crowd of some 60,000 fans shouting "Penalty!" in unison. Such an emphatic and unanimous message may provide a cue for the referee that a penalty is indeed the appropriate decision. Also, even with the best of intentions, the referee's image of extreme displeasure from the crowd if a penalty is not called might swing a 50-50 decision in the home team's favour. In the majority of recent seasons over 55% of yellow and red cards, and over 60% of penalties, have been given against the away team. It could be that this is simply due to greater frustration, and thus more reckless behaviours, on the part of

the away team. However, research has shown that the perception of decisions against the away team is much higher when incidents are judged in the presence of crowd noise, whereas bias is eliminated when the same incidents are judged in silence.

Familiarity with a venue might also contribute to the home advantage. The surface and size of football pitches vary considerably. A player who regularly trains or plays on a large pitch may encounter problems when suddenly faced with a somewhat smaller playing field. For example, it may prove difficult to judge accurately the length of a particular pass or execute an often-rehearsed set play. Of perhaps greater consequence may be the nature of the playing surface, which may be uneven, tacky or exceptionally smooth; historical statistics show an inflated home advantage for teams who played on artificial surfaces. The geometric layout and advertising hoardings of a particular stadium may also provide home players with helpful visual cues when they stumble or turn quickly and must rapidly reorient themselves to the unfolding action.

It also seems logical that the very act of travelling to an away fixture might disrupt training regimes, mental preparation, and circadian rhythms. Early morning departure times, boring journeys on a cramped coach, and travel across time zones can produce fatigue and listlessness. Even when teams can afford the luxury of air travel, they may become disorientated by jet lag, and overnight stays in unfamiliar surroundings can lead to insomnia amongst the normally soundest of sleepers. Nonetheless, analyses of results rarely show impaired performance for teams who have travelled far. In the Premiership last season, there were actually slightly more goals scored by away teams who had travelled more than 200 miles (average = 1.37 goals per game) compared to those travelling between 100-200 miles (1.14) or less than 100 miles (1.13).

A NEW EXPLANATION: TERRITORIALITY AND HORMONES

It is likely that crowd support, referee bias, familiarity and travel all make contributions to the home advantage, though none of these seems to predominate as the main factor. Recent research has provided evidence for a new, hitherto ignored contender for the cause of the home advantage. It is well documented that animals vigorously protect and defend their home territory, to the extent that they can attack and fend off powerful invaders who would normally overwhelm them in other locations. Such a protective instinct has survival value and is likely to have evolved through natural selection in all animals, even humans, who would not have remained alive if their home, mate and belongings had been easily seized by predators. So although humans now have door locks, security systems and police to protect their homes and property, they too may instinctively become alert and activated when an area they perceive as their own is invaded or threatened.

Animal research suggests that the steroid hormone testosterone is a key factor in this behaviour. Higher concentrations of this hormone are associated with aggression, assertiveness and dominance in the face of competition for resources, especially in males who produce higher amounts than females. In a recent project we reasoned that footballers perceive their home ground as their own and thus might experience an

increase in testosterone when a competitor threatens their territory.

In the first study, testosterone was measured in ten semi-professional male footballers before a home game and an away game against the same team whose position in the league at the time was comparable. On both occasions the players deposited a saliva sample in a labelled cup one hour before kick-off. The analysis showed that testosterone was much higher before the home match than the away match (see Figure 1).

We extended the procedure in a second study, testing 19 footballers from the under-19 squad of a Premiership football side. This time testosterone was measured before home and away matches against two different teams – one rated by the players as an extreme rival – as well as before three neutral training sessions. Once more we found that testosterone concentrations were significantly higher before the home games than the away games, thereby confirming data from our initial study. In addition, we noted that testosterone concentrations between away matches and training conditions were virtually identical, confirming our proposal that the change in testosterone represents a surge before a home game and not a decline before an away game.

In both studies the players completed short mood questionnaires before and after competing, but ratings of dominance, aggression, confidence and enthusiasm did not relate to testosterone concentrations or change according to the venue. It could be that the players were so aroused by the matches that they were not consciously aware of hormonal changes, but it is also possible that they wanted to portray themselves as resistant to the demands of the different situations.

FURTHER EVIDENCE

Some interesting effects for player position were indicated (see Figure 3). Overall, the strikers tended to have higher concentrations of testosterone across the different venues, while the goalkeepers were lowest in training and highest against the extreme rival, and the defenders were also particularly high during competition. Perhaps protective territoriality responses were more likely to occur for goalkeepers due to their representing the last line of defence. However, in view of the low numbers of players in the analysis, particularly goalkeepers (N=2), these interesting patterns must be seen as speculative and explored further. Figure 3 also shows that testosterone concentrations were especially high when the opponent was perceived as an extreme as opposed to moderate rival, suggesting that perceptions of threat can vary according to the situation.

In these experiments some of the popular explanations for the home advantage can be at least partly eliminated in that the games did not attract large, noisy crowds, so crowd support and its effects on players and referees were unlikely to be important factors. In addition, the distances travelled to the away venues were relatively small, so overnight stays were unnecessary and disruptions to routines minimal. It might also be noted that the only exception to the pervasiveness of the home advantage in football lies in women's leagues. In the 2002-3 Nationwide Women's Premier League, only 45% of wins occurred at home, with an average of 16 goals scored at home and 16.4 away. The fact that

Table 1 EXAMPLES OF THE HOME ADVANTAGE IN ENGLISH FOOTBALL, 2002-2003

Competition (and number of teams)	% games won at home	% games won away	Mean number of goals scored at home	Mean number of goals scored away
Premiership (20)	49.2	27.1	28.0	21.5
Division 1 (24)	44.7	29.3	35.3	27.8
Division 2 (24)	42.7	30.0	33.0	26.2
Division 3 (24)	41.6	27.8	33.5	25.7
Conference (22)	44.1	31.8	33.5	27.5
Unibond (23)	42.5	33.0	35.4	31.4

testosterone concentrations are so much higher in males, and that female performance does not seem to be so venue-dependent, could imply further the role of testosterone underlying the operation of protective territoriality in the home advantage.

RECOMMENDATIONS

Players and coaches can benefit from being aware of the potential positive and negative effects of such hormonal changes. Testosterone has been shown to enhance alertness, reaction time and visuospatial ability, as well increasing strength and endurance and raising metabolic rate, all of which should have obvious positive effects on a competitor. However, increases in testosterone are also associated with impulsivity and risk-taking, which can result in poor decisions and aggressive responses to provocation. The player in our studies whose testosterone concentration surged the most was sent off in a home match!

Our research certainly does not propose that artificial steroids would improve away performance. Besides the legal, ethical and medical dangers, studies show that unnatural sources of testosterone do not have the same effects as the natural hormone. Our findings instead highlight that individuals have different responses to the venue. Although most players produce higher concentrations of testosterone when they play at home, some show only a slight increase while others surge dramatically. It can be illuminating, therefore, to analyse hormonal changes at the individual level. Taking samples of testosterone is a relatively unobtrusive process, but for coaches who do not have the necessary laboratory support for analysis, patterns in players' behaviour at home and away matches can be monitored. If individuals are consistently more aggressive and impulsive at home, it could be that their territoriality response is too extreme. Similarly, the preparation of team members who subjectively feel the burden of 'defending the territory' should address potential antagonistic inclinations. Although coaches and captains are often tempted to try to excite and arouse players before a match, overly territorial players may need to be soothed and calmed before they compete. On the other hand, for individuals who are visibly subdued or submissive whenever they compete away from home, techniques for 'psyching up' may be useful. In all cases, players should be encouraged to

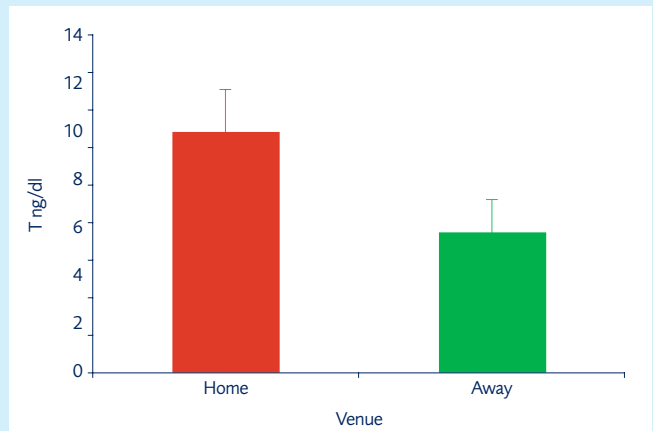


Figure 1 Testosterone concentrations before home and away matches, Experiment 1

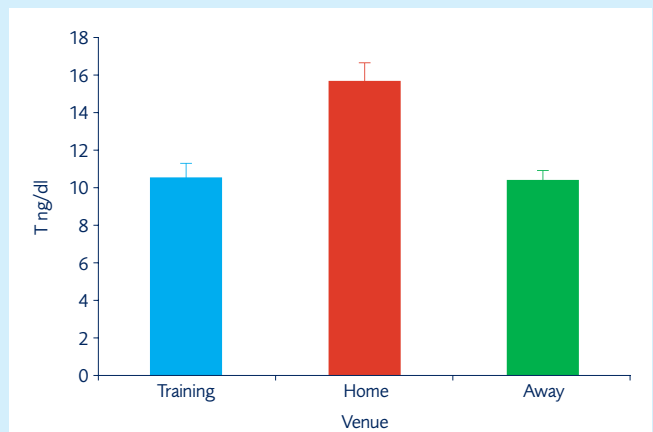


Figure 2 Testosterone concentrations before training and home and away matches, Experiment 2

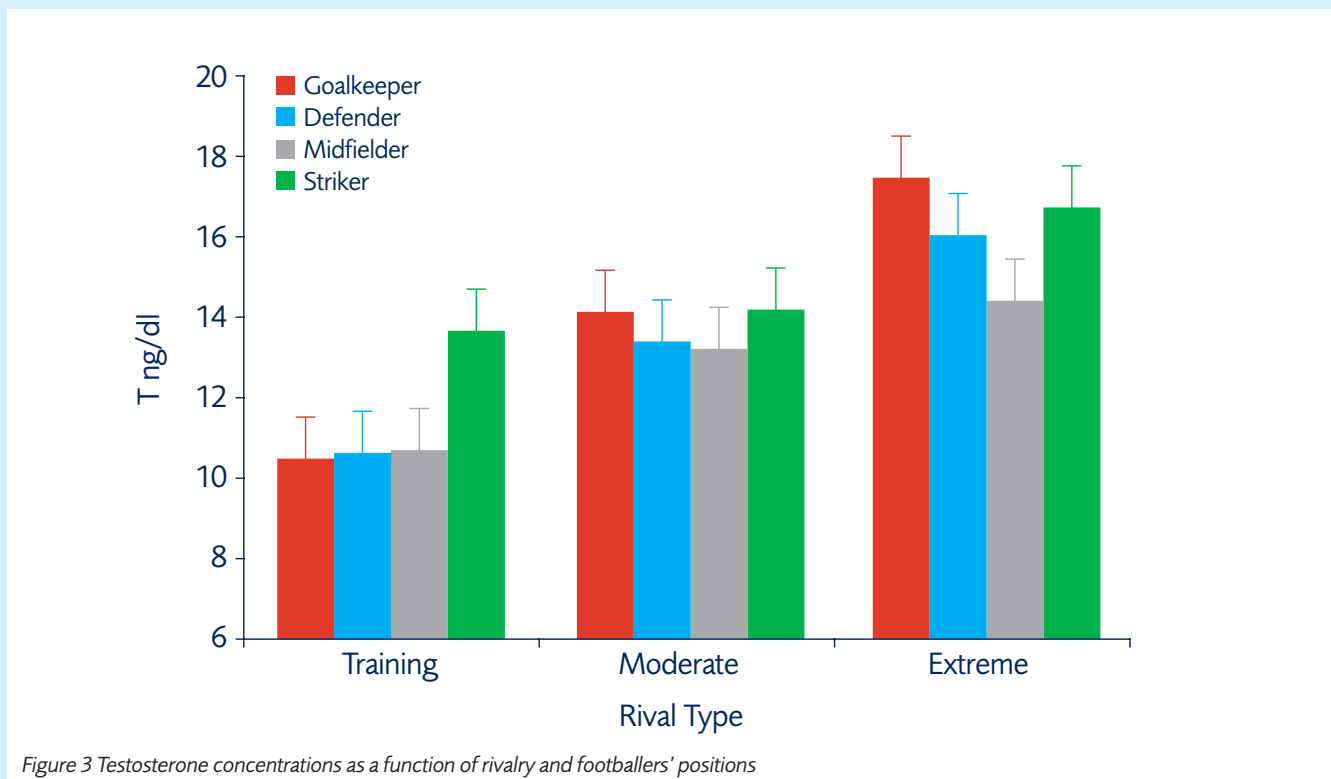


Figure 3 Testosterone concentrations as a function of rivalry and footballers' positions

Table 2 EXPLANATIONS FOR THE HOME ADVANTAGE

Crowd support	The crowd energises the home players and inspires confident, dynamic performance
Referee bias	Officials are swayed by pressure and cues from the crowd to make decisions in favour of the home team
Familiarity with the venue	Knowledge of the pitch, surroundings, and facilities give home players an edge
Travel and routine disruption	Visitors are disorientated by discomfort and changes to familiar routines
Territoriality and hormones	Testosterone in home players increases when their territory is under threat, leading to assertive, dominant behaviours

increase their level of self-knowledge so they can be aware of and prepared for their responses.

Preparation for home and away matches can take into consideration the other factors associated with the home advantages. Clubs often encourage fans to show their support by attending matches and providing vociferous positive feedback for players, but audience responses are unpredictable. Footballers therefore need to focus on what they themselves can control. Psychological skills for maintaining concentration and attentional focus are critical, both in away matches when the majority of the crowd is hostile and at home when the crowd fervently displays its desire for a positive outcome or vents its frustration when results are disappointing. Exercises designed to improve concentration and attention can be highly useful in coping with such demands of crowd behaviour in both home and away conditions. Inoculation training, where people are exposed to criticism in a controlled setting, can help performers cope with temporary lapses of support and recover from their own errors. Habituation to unpleasant situations can reduce arousal responses and leave footballers more capable of playing optimally.

If referees are indeed unconsciously influenced by a home crowd to make more decisions against the away team, then responding aggressively and angrily to such seemingly "unfair" decisions may prove to be very costly. When playing away players should strive to ensure that they do not make rash challenges or antagonise the match officials. Again, psychological strategies designed to increase attentional focus can be used to reduce or eliminate retaliatory responses toward the referee, regardless of how unjust a decision might seem.

As discussed earlier, strange surroundings and deviations from routine may be implicated in the home advantage. Disruptions to normal preparations should be minimised wherever possible. Clearly it is easier to follow comforting rituals at home, but steps can be taken to implement customary procedures for away venues as well. Standard practices, for example related to packing, meeting points and activities during travel, should be encouraged from the outset of any journey. Early arrival and attention to comfortable accommodation can also prove highly beneficial. Once at the venue, reminders of home should be made prominent so that a sense of ownership can be established. Simple additions to the away changing room, such as home colours, logos and familiar music, can be reassuring and invigorating. Previous 'homework' should be undertaken to increase knowledge of an unfamiliar venue; information about the dimensions and state of a pitch can be conveyed to players to increase their confidence and readiness. This information can give coaches and players an edge with regard to their pre-match preparation strategies.

Defensive manoeuvres can also be adopted by the home team to capitalise on the visitors' vulnerability to the discomfort of playing in foreign territory. Decorating the away changing room with territorial markers such as the home team's colours and logos reminds the away

players that they are in someone else's territory. Animals actually mark their territory with urine and other scents – this is unlikely to be acceptable in the away changing rooms, but some theorists contend that it might be useful for goalkeepers to leave their personal mark surreptitiously around their area on the pitch!

In summary, preparation strategies should take into account all the potential causes of the home advantage. It is useful for coaches to encourage players to think constructively about the factors within their control to avoid pessimistic attitudes when playing away. Preparation for visits is all-important: gather as much information as you can about the opponents' grounds and personnel, build familiar routines into away visits, and generally make the entire event as 'home-like' as possible. Also, do not overlook the fact that visitors to your grounds may be susceptible to their own gloomy expectations. Finally, an awareness of behavioural patterns of individual footballers playing at home versus away can be critical. People are not the same, and the ideal preparation for one player may not suit another. The more popular explanations for home advantage effects are summarised in Table 2.

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