



## Perspectives on the home advantage: A comparison of football players, fans and referees

Melissa Anderson<sup>a,\*</sup>, Sandy Wolfson<sup>b</sup>, Nick Neave<sup>b</sup>, Mark Moss<sup>b</sup>

<sup>a</sup> Department of Sport and Exercise Sciences, School of Life Sciences, Northumbria University, Newcastle upon Tyne, NE1 8ST, UK

<sup>b</sup> Department of Psychology, School of Life Sciences, Northumbria University, Newcastle upon Tyne, NE1 8ST, UK

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### ABSTRACT

**Objectives:** The study aimed to address the paucity of research pertaining to perceptions of causes of the home advantage. The views of three key personnel groups in football (soccer) were examined with regard to their perspectives.

**Design and procedure:** Players ( $n = 94$ ), fans ( $n = 116$ ) and referees ( $n = 163$ ) completed a ten-item questionnaire on which they rated the contribution of the most prominent factors known to influence the home advantage.

**Results:** Factor analysis revealed three subscales (officials, player state and home environment) relating to explanations for the home advantage. A MANOVA examining the groups' ratings for these three subscales found that the fans and player gave higher ratings for the contribution of officials and player state than did referees, while the fans gave higher ratings for the home environment.

**Conclusion:** The present study provides an insight into conceptualisations of the home advantage from the perspectives of different football groups. The relevance of self-enhancement, emanating from motivational and information processing mechanisms, is considered.

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### Introduction

An early paper by Schwartz and Barsky (1977) marked the beginning of a series of theoretical and archival-based studies examining the superior performance of teams playing at home as opposed to away venues. Courneya and Carron (1992) defined this home advantage phenomenon as “the consistent finding that home teams win over 50% of the games played under a balanced home and away schedule” (p 13). Most of the related subsequent research has continued to focus on statistical evidence demonstrating the pervasiveness of the home advantage across a wide range of sports for all levels and eras (see Jamieson, 2010), and many of these have also proposed explanations for the phenomenon (Carron, Loughhead, & Bray, 2005).

Factors proposed to influence the home advantage have included crowd behaviour, travel fatigue, routine disruption, venue familiarity, referee bias, rules and territoriality. Many of these studies tend to evaluate explanations from an objective basis, by examining relationships between venue performance with variables such as size of audience, distance travelled, referee decisions,

and newness of stadium (see Agnew & Carron, 1994; Courneya & Carron, 1992; Neave & Wolfson, 2003; Nevill, Balmer, & Williams, 2002; Pollard, 2002). The extent to which competitors concur with these explanations has been discussed in just a few studies. In one of the first attempts to explore players' perceptions in relation to game location, Jurkovic (1985) surveyed 74 basketball players and found that 76% reported greater self-confidence levels when playing at home than away. A more extensive continuation of this work (Bray & Widmeyer, 2000) investigated 40 female basketball players and found an overestimated expectation of poor away performance across their league. These players estimated an average of home wins at 60.6%, a figure higher than the actual winning percentage of 55.3%. Furthermore, players estimated their own team's home winning percentage at an average of 59.6% with the actual percentage being 54.2%. In addition the players indicated familiarity with the home court as the major explanation for better home performance, followed by home crowd support and travel factors. Waters and Lovell (2002) examined professional football players' perceptions of playing at home and away. Results revealed that players felt more positive, confident and anxious at home while indicating that they did not expect to win away from home.

The effects of fans in terms of providing crowd support to encourage and energise home players have also been postulated. Statistical analyses have generally failed to illustrate direct effects

\* Corresponding author. Tel.: +44 191 227 3865; fax: +44 191 227 3190.

E-mail address: [melissa2.anderson@northumbria.ac.uk](mailto:melissa2.anderson@northumbria.ac.uk) (M. Anderson).

as a function of size or density of the audience (Morley & Thomas, 2005; Strauss & Bierschwale, 2008). However, a few studies note that fans do believe that the noise they generate is the main cause of the home advantage (Smith, 2005). Wolfson, Wakelin, and Lewis (2005) utilised internet surveys to obtain 461 football fans' perceptions, wherein they were required to rate the commonly known causes of the home advantage. In keeping with research into egocentric bias, supporters indicated crowd support as significantly more influential than travel, familiarity, referee bias and territoriality in the home advantage. Supporters also felt responsible for inspiring their team to victory and believed they could influence referee decisions in favour of their team.

One specific area in which crowd support has indeed been implicated in the home advantage concerns effects of noise on referees. Referee bias due to information processing errors and the desire to please the home crowd has been suggested by a number of authors (Boyko, Boyko, & Boyko, 2007; Downward & Jones, 2007; Page & Page, 2010). The most conclusive referee bias study to date was conducted by Nevill et al. (2002) who investigated whether the absence or presence of crowd noise could influence varying levels of qualified referees in their decision-making. The authors reported that those referees who made decisions in a 'crowd noise' condition awarded significantly fewer fouls against the home team (15.5%) than those who watched in silence. Moreover, those referees who had been allocated to the noise condition gave similar decisions to the actual match referee. In marked contrast, referees in the silence condition were more certain with their decisions, awarded a greater number of fouls against the home players and chose more no foul options. Wolfson and Neave (2007) have suggested when a football referee is faced with some 60,000 fans shouting 'penalty!', it becomes increasingly difficult for a referee to decipher whether or not a penalty has occurred; the presence of such emphatic information may compromise objective decision-making even when the referee attempts to remain impartial. The authors also reported that the pressures which stem from a large vociferous crowd could encourage or act as a threat to the referee via a 'motivational' social pressure effect such as crowd pleasing or displeasing.

The various key influences on the home advantage have been set into a coherent model, the Game Location Framework (Courneya & Carron, 1992), which comprises five overarching dimensions (game location, game location factors, critical psychological states, critical behavioural states, performance outcomes). These concern particular personnel in sport. The two factors pertaining to critical states are especially relevant for officials and players who can be subject to anxiety, self-presentation and outcome expectations (critical psychological states), as well as aggression, tactics, effort expenditure and subjective decision-making (critical behavioural states). The impact of the crowd is also considered in the framework and is conceptualised under game location factors alongside learning, travel and rule factors; these factors have been known to account for considerable interest in home advantage research.

Although fans, referees and players are featured in Courneya and Carron's framework for the home advantage, the respective views of these groups have been largely ignored. Bray and Widmeyer (2000) noted that only a few studies have attempted to investigate the home advantage from the perspective of key personnel within sport. Information about the groups' subjective understanding of reasons for the home advantage, and the underlying processes behind their respective perceptions of the role they play in it, could be helpful to sport psychologists and coaches from both a theoretical and practical point of view.

In particular, a number of cognitive biases might operate in such a way as to lead to specific perceptions of causes of the home advantage within different groups. These may be largely based on

motivational processes, where the primary goal is self-enhancement. Considerable social psychological research demonstrates the pervasiveness of self-enhancement mechanisms. Taylor and Armor (1996) and Taylor and Brown (1988) suggest that people make use of a number of 'positive illusions' in order to maintain a pleasing self-image, experience positive affect and efficacy, and provide time to plan and gather resources when threatened. This can be accomplished through illusions of superiority (Hoorens & Harris, 1998), where people conclude that they have better qualities than others in traits such as honesty, intelligence and trustworthiness (Alicke, Vredenburg, Hiatt, & Govorun, 2001). Self-aggrandizement in skill also exists; Waylen, Horswill, Alexander, and McKenna (2004) found that expert and novice police drivers believed they were better drivers than their fellow police.

Attributional bias is another way of bolstering self-esteem, where people use internal attributions to explain positive outcomes but relatively external ones when results are negative (Lau & Russell, 1980). For example, members of a losing team playing away from home might ignore the impact of their own technique and tactics and instead focus on their belief that the officials' decisions were biased in favour of the home team. Other well researched self-enhancement mechanisms include the illusion of control, whereby people assume they exert more control than they actually do (Langer, 1975) and unrealistic optimism (Weinstein, 1987), the belief that better outcomes will occur for oneself than for others.

Ross and Sicoly's (1979) research into the role of egocentrism suggests that information processing errors, in particular the availability heuristic (Tversky & Kahneman, 1973), contribute to the self-enhancement process. People tend to focus on salient information to which they have been exposed. Having access to their experience of working hard, and being aware of times they have been guided by principles, could confirm their superiority as well as prompt them to use internal explanations for positive outcomes and external ones for negative experiences.

The key personnel in sport might thus be expected to focus on different explanations for the home advantage. Referees may deny that they play a role in the phenomenon in order to retain confidence (Wolfson & Neave, 2007), explaining a home victory in terms of the away team's travel fatigue or aggressive response to provocation. Their available memories of their honesty and impartiality in past games add support to their conclusion. Players know that they train and work hard both at home and away, so they might be more inclined to believe that the referee is the reason for the existence of the home advantage. Supportive and enthusiastic fans come to believe that they are superior to rival fans (Wolfson et al., 2005) while noting their minority status in a rival stadium, thus concluding that they are responsible for their team's better performance at home than away. These beliefs would all benefit the respective groups by maintaining and enhancing their self-esteem. This could have further self-fulfilling prophecy effects, leading to expectations, blame and continued conflict in future encounters.

Despite the plethora of research available on the home advantage, few studies have directly examined views of players, fans and referees on its causes, and little interest has been shown in attempting to compare directly these groups' opinions. Such views could have practical implications for facilitating game preparation and tactics, such as by addressing differential expectations of the key groups involved, and potentially assist with designing interventions for teams that are not playing well at home.

The present study therefore aims to examine the perceptions of players, fans and referees regarding the home advantage in football (soccer). These are key groups in football who all have been previously implicated in the home advantage. It is hypothesised that cognitive biases will operate such that the groups will either

**Table 1**  
Correlation matrix for observed variables.

	Crowd energises	Familiar environment	Crowd intimidate	Away players foul	Away travel	Crowd provide info	Players protective	Officials manipulate	Home players calm	Officials reluctant
Crowd energises		.507	.214	.040	.092	.115	.290	-.007	.047	.042
Familiar environment			.134	.013	.220	.029	.378	.069	.142	.004
Crowd intimidate				.409	.156	.465	.207	.396	.201	.544
Away players foul					.257	.429	.248	.469	.447	.389
Away travel						.292	.299	.194	.280	.148
Crowd provide info							.359	.485	.408	.510
Players protective								.226	.346	.177
Officials manipulate									.461	.553
Home players calm										.349

acknowledge or deny their groups' respective contributions to the home advantage when it is in their interests to do so: fans will take credit for cheering their home team to victory; players will focus on factors beyond their control; and referees will distance themselves from explanations of referee bias.

## Method

### Participants

An opportunity sample comprised 373 participants (311 male, 62 female) of targeted football personnel consisting of 94 players ( $M$  age = 17.38,  $SD$  = .80), 163 referees ( $M$  = 37.78,  $SD$  = 15.21) and 116 football fans ( $M$  = 31.67,  $SD$  = 10.23). The overall mean age for all participants was 34.44 years,  $SD$  = 14.18. Players were recruited from a variety of professional and semi-professional football teams and referees from county football associations. Football fans who supported a wide variety of teams were also asked to complete the survey. All groups contained males and females and were demographically spread across the UK.

### Materials and procedure

Ethical approval was granted by the School of Life Sciences Ethics Committee prior to questionnaire distribution. In addition, player participation approval was granted from football clubs. A ten-item paper and pencil questionnaire was administered to an opportunity sample of Academy football players, while the same questionnaire was given to county referees and fans who were recruited through internet website organisations via the online survey generator SurveyMonkey. The methods chosen for survey distribution were based largely on the means of gaining access to the particular groups. Initially all groups were to complete the survey online; however, the football clubs that were recruited for the study expressed that they would prefer players to complete a paper and pencil version of the questionnaire rather than an internet based version. Consistency in results of studies using internet and other samples has been reported by Birnbaum (2001) and Gosling, Vazire, Srivastava, and John (2004).

The questionnaire items were based upon a previous home advantage questionnaire ascertaining the perceptual viewpoints of football fans on the home advantage (see Wolfson et al., 2005). The factors that were incorporated within the questionnaire had also been previously identified in Pollard and Pollard's (2005) conceptualisation of the inter-relationships of the home advantage (the conceptualisation identifies territoriality, familiarity, psychological factors, crowd support, travel, referee factors). These factors were then integrated into generalised statements about key personnel such as those pertaining to the crowd (e.g. *the home crowd energises and motivates the players*), players (e.g. *the home players are more familiar with the environment*) and officials (e.g. *the*

*officials are reluctant to call a foul or penalty against the home team*). Responses were scored on a 7 point Likert-type agreement scale ranging from 1 (not at all) to 7 (extremely) with only the endpoints labelled.

## Results

Following Tabachnick and Fidell's (2007) guidance, principal components analysis was employed to reduce the questionnaire items to a smaller number of components and use them as dependent variables in a multivariate analysis of variance. Initially the factorability of the correlation matrix (Table 1) was assessed by consideration of the presence of correlations greater than .3. Eighteen of the 45 correlations exceeded this benchmark, indicating that the correlation matrix may contain factors.

This is further supported by Kaiser's measure of sampling adequacy with a calculated value of .796 exceeding the criterion of .6 required for good factor analysis. Principal components analysis proceeded on the questionnaire items rated by the participants with regard to reasons for the home advantage, extracting components, guided by Kaiser's criterion, with Eigenvalues greater than 1 (Tables 2–4). Varimax rotation was carried out to make the solution more interpretable without changing its underlying mathematical properties. Three components emerged, tapping into factors related to the role of the referees, the players' state, and the home environment. Two items loaded onto more than one component and so did not feature in later analyses.

In order to calculate dependent variables for further analysis, items that loaded highly onto each component were summed and averaged, as suggested by Tabachnick and Fidell (2007) to provide an appropriate estimate of factor scores. A MANOVA was carried out using these estimates as DVs with role (player, referee, fan) as the grouping variable. Using Pillai's trace criterion, results revealed a significant main effect for role on the new home advantage compound dependent variable despite any loss of power imposed

**Table 2**  
Principal components analysis: Initial extraction of components and after varimax rotation.

Component	Initial Eigenvalues			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.579	35.793	35.793	2.809	28.089	28.089
2	1.695	16.946	52.739	1.791	17.914	46.003
3	1.048	10.481	63.220	1.722	17.218	63.220
4	.749	7.489	70.709			
5	.639	6.391	77.100			
6	.607	6.074	83.174			
7	.509	5.093	88.267			
8	.441	4.412	92.678			
9	.389	3.893	96.571			
10	.343	3.429	100.000			

**Table 3**  
Component factor loadings following principle components analysis with varimax rotation (with contributing scale items in bold).

	Officials	Home environment	Player state
The officials are reluctant to call a foul or penalty against the home team.	<b>.83</b>	.06	-.00
The home crowd intimidate the officials.	<b>.79</b>	.28	-.09
The officials want to manipulate the home crowd.	<b>.70</b>	-.07	.32
The home crowd provide information to the officials about what has happened, as in 'handball.'	<b>.68</b>	.06	.35
The home crowd energises and motivates the players.	.10	<b>.86</b>	-.06
The home players are more familiar with the environment.	-.06	<b>.81</b>	.23
The away players have had to travel.	.05	.13	<b>.72</b>
The home players are calmer and more controlled than the away team so commit fewer infringements.	.37	-.03	<b>.68</b>
The away players are more likely to commit fouls so are booked more.	.60	-.07	.42
The home players feel more protective over their territory.	.16	.47	.58

due to the non-orthogonal nature of the calculated estimates  $V = .37$ ,  $F(6, 738) = 8.14$ ,  $p < .01$ ,  $\eta p^2 = .149$ .

Three Bonferroni corrected univariate ANOVAS were then performed to identify differences between groups for each extracted component separately. A significant difference between roles was revealed for the Officials component  $F(2, 372) = 54.88$ ,  $p < .01$ ,  $\eta p^2 = .23$ . Post hoc comparisons with Bonferonni correction showed that referees ( $M = 2.18$ ,  $SD = 1.03$ ) scored lower on the referees subscale than players ( $M = 3.25$ ,  $SD = 1.05$ )  $p < .01$ ,  $d = 1.14$ , and fans ( $M = 3.36$ ,  $SD = 1.03$ ),  $p < .01$ ,  $d = 1.15$ , with no difference between players and fans. A significant difference between roles was also revealed for the Home Environment component  $F(2, 372) = 29.06$ ,  $p < .01$ ,  $\eta p^2 = .03$ ). Post hoc comparisons with Bonferonni correction showed that fans ( $M = 5.69$ ,  $SD = .72$ ) were higher than referees ( $M = 5.33$ ,  $SD = 1.28$ ),  $p = .013$ ,  $d = .36$ , and players ( $M = 5.26$ ,  $SD = .89$ ),  $p = .008$ ,  $d = .43$ , with referees and fans not differing. Finally, a significant difference between roles was revealed for the players' state  $F(2, 372) = 5.76$ ,  $p = .01$ ,  $\eta p^2 = .14$ ). Post hoc comparisons with Bonferonni correction showed that referees ( $M = 3.06$ ,  $SD = 1.26$ ) scored lower than players ( $M = 4.14$ ,  $SD = 1.04$ )  $p < .01$ ,  $d = .94$ , and fans ( $M = 3.86$ ,  $SD = 1.18$ ),  $p < .01$ ,  $d = .66$ , with no difference between players and fans.

## Discussion

The aim of the present study was to compare the perceptions of players, referees and fans regarding the causes of the home advantage. The three groups were asked to rate ten of the most widely cited factors pertaining to the home advantage, such as crowd influence, familiarity and the impact of the referee. It was predicted that results would reveal differences which could be linked to self-enhancing biases based on motivational distortions and information processing errors.

The results revealed that, overall, the three groups gave their highest ratings to the home environment subscale. This was the only subscale with mean scores higher than the theoretically neutral point of four on the seven point scale. Thus participants believed that the home advantage is mainly caused by crowd support and environmental familiarity.

Notwithstanding, fans were significantly more likely than players and referees to endorse this environmental explanation, indicating that they believe their supportive, familiar presence

energises and motivates their team. Indeed, their mean of 5.69 was the highest rating of all items by all groups. This perception is consistent with the findings of Wolfson et al. (2005), where football fans indicated that they were able to inspire players to victory, distract opponents and influence officials. Highly identified fans have been found to hold a strong sense of association with their team and fellow fans, a desire for positive outcomes, and a dislike of their rivals (Shank & Beasley, 1998; Wann & Branscombe, 1993). Along with evidence that fans prefer their team to win than to watch a close, exciting match (Rascher & Solmes, 2007), it is likely that fans are motivated to feel they can aid in their team's quest for victory. The present finding has also been supported by Smith (2005), who reported from media narratives and fan websites that fans view crowd support as the main factor in the home advantage. In fact, the author reported that neither the media nor fans offer a critical view about what could produce the home advantage, instead tending to focus purely on the influence of the crowd.

The other groups also highlighted the importance of the home environment. With regard to players, the result is consistent with the findings of Bray and Widmeyer (2000), who examined perceptions of the home advantage in basketball. In their study, players believed the home crowd and court familiarity were major contributors, with familiarity deemed slightly more influential than the crowd. Gould, Guinan, Greenleaf, Medbery, and Peterson (1999; 2002) also found that Olympic athletes identified the crowd as having a highly positive impact on their performance.

In addition, referees gave their highest ratings to the home environment, contrasting with their lowest scores for the effect of officials, where referees were significantly lower than fans and players. This finding is as predicted and consistent with previous research. Referees are trained to be impartial and unbiased, and Wolfson and Neave (2007) provide evidence illustrating that they firmly believe they do have these characteristics. Although they expect to be censured by players, spectators and coaches, they attribute criticism to bias and lack of knowledge among these groups. The authors further showed that referees use a range of cognitive distortions as coping mechanisms to enhance self-esteem and deal with the mismatch between their perceived competence and criticism from others.

This also seems to be supported in the current study. Despite evidence to the contrary where referee bias has been established

**Table 4**  
Descriptive data for players, fans and referees.

	Player ( $n = 94$ )	Fan ( $n = 116$ )	Referee ( $n = 163$ )	Overall mean
Official	3.25 (SD = 1.05)	3.36 (SD = 1.04)	2.18 (SD = 1.03)	2.82 (SD = 1.18)
Player state	4.14 (SD = 1.04)	3.86 (SD = 1.18)	3.06 (SD = 1.28)	3.58 (SD = 1.28)
Home environment	5.26 (SD = .89)	5.69 (SD = .72)	5.33 (SD = 1.28)	5.43 (SD = 1.05)

(Boyko et al., 2007; Buraimo, Forrest, & Simmons, 2010; Downward & Jones, 2007; Nevill et al., 2002), the referees denied any explanation which would imply that they play a contributory role to why teams win more games at home. This denial supports their preferred self-image as well as the wish to present themselves favourably to the outside world. Thus it is consistent for the referees to be less likely than players and fans to believe that they feel intimidated by the home supporters, act on information from fans, attempt to manipulate the audience and feel reluctant to make decisions against the home team.

Further, illusory superiority might be a motivational strategy utilised by football referees in order to maintain a positive self-concept and present themselves favourably to others (Abramson & Alloy, 1981). Illusory superiority has been conceptualised by Taylor and Brown (1988) as a healthy psychological mechanism which helps people to adapt, experience positive efficacy and provide time when under threat to plan and gather resources.

Interestingly, the referees did not take advantage of the opportunity to give self-enhancing reasons for the prevailing proposition that they make more decisions against the away team. They actually gave lower ratings than players and fans on the players' state subscale rather than agreeing with the home advantage explanation that away players have had to travel more and are less calm so commit more infringements. Endorsing these explanations would have provided legitimate reasons for ostensible referee bias. The fact that the referees declined to make use of a good defence against accusations of bias suggests that self-enhancement alone may not explain their other responses. Given that the referees tended to give low scores on all subscales, it is possible that they simply do not like to commit themselves to any explanation of the home advantage and may not even want to contemplate its existence. It should be noted that these findings were not wholly unexpected given that referees aim to maintain a neutral perspective and that they are subjected to far greater censure than fans and players. Referees may by default be less inclined to acknowledge behavioural differences between home and away players regardless of whether or not they truly believe it.

In summary, all groups endorsed the home environment as an explanation for the home advantage, with the fans particularly high on this subscale. Lower ratings were given for the referees and players' state subscales, with the officials significantly lower than the other two groups. The data from the present study regarding the groups' perceptions could suggest a self-fulfilling prophecy whereby group members think and behave in ways that are in keeping with their and others' expectations (Merton, 1957). An example of this would be the players' expectation that the home environment helps them, which could in turn motivate them to play more attentively and assertively at home and perhaps put in less effort away. The influence of expectations has been demonstrated in the social psychology literature (see Jussim & Harber, 2005). In a sporting context, expectations of poor away performance could be anxiety-provoking and distract visiting players, causing them to monitor their performance more closely than usual. This diversion of attention could be particularly problematic for high-level performers who rely on automated processes (Jackson & Beilock, 2008).

Other mechanisms might also be implicated in the effects found in this study. Taylor and Brown's (1988) review of cognitive illusions provides evidence that people tend to confirm and maintain positive images of themselves by exaggerating their positive outcomes and discounting or even forgetting unfavourable information about themselves. People also conclude that they and their in-group members are characterised by superior characteristics compared to others (Suls, Lemos & Lockett, 2002; Wolfson et al., 2005), as well as assuring themselves that their own

unfavourable or embarrassing characteristics are shared by a wide range of people (Ross, Greene, & House, 1977). People may also be motivated to confirm favourable beliefs about themselves (Nickerson, 1998); for example, when they do clearly fail at an endeavour, they attribute the cause to external factors rather than themselves. Such self-serving biases can be motivational as well as a result of information processing errors (Miller & Ross, 1975), so they remain robust and resistant to change, even in the face of strong counter-evidence.

A potential limitation of the present study pertains to reliance on self-report data. First, both paper and pencil and online versions of the questionnaire were used. Initially data collection was to occur solely by means of an internet survey; however, football clubs participating in the study wished for paper and pencil versions of the questionnaire. This may possibly have had some bearing on the way questionnaires were completed and the time taken to complete them. In addition, concerns about the validity of self-report data have been raised in the performance literature with regard to mood (Neave & Wolfson, 2003) and effort (see Karau & Williams, 1993), where evidence suggests that people's questionnaire responses contradict their behaviour. Whether people intentionally misrepresent their responses in these cases is not clear. Spector (1994) argues that self-report studies should not be dismissed as they can provide useful insights into the various feelings and perceptions held by people of interest.

One further issue relates to the generalisability of the findings. The fans were internet users; the referees were county-level (distributed demographically across the UK); the players were semi-professionals and from several Academy football clubs. These groups might not fully represent fans, referees and players in general. It is also possible that variations between the three groups in terms of age and personality could be at least partly implicated in their different perceptions.

Future research might examine a wider range of items relating to causes of the home advantage. In the present study different aspects of the officials were included. The fact that the home environment and players' state were revealed as additional separate factors suggests that further elaboration on the latter areas could be useful. Moreover only one subscale, related to the home environment, yielded scores above the theoretically neutral point, indicating that additional items might be needed to more fully encapsulate perceptions of the home advantage.

Finally, the views of other groups might be examined in future research. To date, for example, only one study has focussed on the home advantage from the perspective of the sports coach. Gayton, Broida, and Elgee (2001) asked 144 high school coaches to rate five potential causes of the home advantage regarding their respective sports. Coaches cited familiarity, crowd support, travel, referee bias and self-fulfilling expectancies as being important contributors to the home advantage in their sport; however, like the participants in the present study, they identified venue familiarity as the most important factor for their teams' better performance at home. As the coach may have to mediate when players, fans and the media argue about the reasons for an outcome, their own understanding could be critical. Indeed, inter-relationships between all the key personnel in sport are important in this context, as each group is likely to harbour its own subjective views about the cause of the home advantage, thus increasing the likelihood of conflict and misunderstandings.

## Conclusion

Overall, the study provides an insight into the perceptions of players, fans and referees regarding the causes of the home advantage in football. Results highlight the groups' similar opinions

in identifying aspects of the home environment as having the greatest impact on a team's superior performance at home. However, significant differences between players, fans and referees suggest that self-enhancement may be a critical feature behind their different perspectives.

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The authors report no conflict of interest.

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