Abstract

This paper discusses morphological aspects of contemporary football stadiums. Recent national and international tournaments have presented considerable demands for new and more complex buildings for football. In that context, the type manifests contemporary distinctiveness – in fact, football stadiums become a unique design theme in late 20th century, motivated by the development of norms of security and their relation to mass media and advertisement.

In addition, recent exemplars of the type present a noticeable morphological interest: an evident disjunction between their spatial structures and their external surfaces images. While the former is constituted by rigid international prescriptions that standardize program and spatial characteristics (location of technical rooms, conditions of access or restriction to specific zones, geometrical criteria for the perfect view of the pitch and etc.), the latter becomes more susceptible to the free usage of formal elements detached from the spatial structure – basically directed by non-architectonic self-references, but imagistic, iconic and semiotic ones.

In this study, that phenomenon is evaluated in the context of the 2014 Brazilian World Cup t1. While configurational analyses of space presents the rigid syntax of the type, analytical representation of formal elements demonstrate how the buildings tend to become recognizable by a well-defined self-determining and almost totemic image associated to local aspects or icons of the visual culture of each host city – like the reference to sand dunes, tropical vegetation or local team’s colours.

In other words, appearance prevails over function every time football itself is not enough for sociocultural validation of the buildings. These characteristics represent a new building type: the gadget building.

Keywords

Stadium, football, type, space, form.
1. Buildings for football: society and space

Professional football is one of the most organized and complex contemporary global activities. Its management goes beyond geopolitical boundaries and makes it not only a popular sport, but also one of the most popular worldwide social activities. There are several actors and scenarios that make the football business. The football players and the match itself are, evidently, at the centre stage, after all, there is no business without a football match. The football clubs, some with more than one hundred years of existence, form the local structure that binds the relationship between players and supporters. Complementary, there are the managers, who deal with players’ rights and professional careers; sports industries that associate their products to clubs or players; and the mass media that buys the rights for transmission, the use of image and brand usage.

Over and beyond this complex social and economical structure lays the Fédération Internationale de Football Association – FIFA. Founded in 1904, FIFA is responsible for establishing official rules for the game and for planning football international calendars and tournaments. It is based in Zurich, Switzerland, and counts with 209 partner nations.

In the world of football, status is gained by taking part in an international dispute within FIFA's brand. For a local club or a national team, it is not only an honour, but it is fundamentally an economic issue, as TV contracts and sponsorships which pay budgets according to the expected audience of the game (Giulianotti, 2010; Kuper; Szymanski, 2009). According to Giulianotti (2010), football involves well defined and identifiable social practices and is absorbed and reproduced generation after generation, similarly to professing a particular religion, as a "modern totemism" (Damo, 2007). This phenomenon leads to the construction of a *habitus* - the term used by Pierre Bourdieu (1989) to refer to the construction and reproduction of social practices that characterizes a particular social group. This particular *habitus* is primarily manifested in the most basic ties between football supporters and the complex and diversified sports culture. Their introduction to such social groups predominantly occurs by choice, adoption or cultural imposition from the club they support (Bourdieu, 1983; 2004; Elias and Dunning, 1992).

The individuality of a football club is shaped by the production and reproduction of certain characteristics that distinguish it from its competitors (Bourdieu, 1979), such as its name and colours, the predominant social class of their supporters, the urban area in which it was created or based, and its football style. For example, Boca Juniors is closely associated to La Boca, in Buenos Aires, Argentina, the neighbourhood in which it was founded. Other clubs are known by the physical strength and commitment of their players for honouring their colours (Giulianotti, 2010).

The production and reproduction of social practices within the world of sports in general, and football, in particular, permeate the daily lives of their supporters. Elias and Dunning (1992) identify this set of social practices as a specific football *habitus*, found in numerically significant groups that supports particular club or national, regional or local teams.

Assuming that there is an underlying social logic that structures space (Hillier; Hanson, 1984), one could say that the *habitus* in football culture is not restricted to the social life (understood as the set of social rules, routines and patterns of relationships between individuals - in sum, their rituals) (Holanda, 2011). It is, in fact, profoundly embedded into the spatial life (Holanda, 2011), e.i., space use patterns. Therefore, the relationship between football club, their supporters and the historical pitches (or stadiums) constituted throughout time, consolidates patterns of spatial life - a spatial *habitus* - typical to each stadium and, respectively, to each group of supporters (Barreto; Nascimento, 2011).

Considering the interdependence between society and space, one could assume that changes in football social life and stadiums spatial patterns may influence supporters’ behaviour and football practices. Therefore, it is possible to analyse to what extent current FIFA standards, stated at FIFA Guidebook (2007; 2011), and football supporters’ *habitus* influences the imagistic appeal of the contemporary stadiums.

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The gadget building: An overview on contemporary football stadiums
1.1 Pre-2014 Brazilian World Cup stadiums

Most Brazilian football stadiums were built between the 1940s and the 1970s (Ferreira, 2008; Malhano, 2002). At that time, the radio was the major communication media. The football matches were transmitted with the support of a simple technological infrastructure, easily installed within the stadiums and the real atmosphere of the game was only experienced by supporting the clubs within the limits of the football stadium, regardless the quality of the radio transmission (De la Corte, 2009).

The organization of the match was amateurish and highly permissive with regards to the supporters’ behaviour, the access of the press to the football pitch and athletes facilities (De la Corte, 2009). During the following decades, in order to preserve the nature of the game and the safety of supporters and athletes, spatial segregation was implemented, such as fences or ditches to separate supporters from athletes and restrict undesirable encounters between different groups of visitors (De la Corte, 2009).

The parameters for stadium design did not consider ideal visual conditions of the football pitch, since the main objective was to provide accommodation for as many supporters as possible. For this reason, seats were scarce and uncomfortable, as it was hardly possible to watch the match seated, because supporters tended to remain standing. It was also common to find spectators using marquees, fences and guardrails to get a better visibility, leveraging accident possibilities (De la Corte, 2009).

Few stand areas were covered, indicating certain negligence in relation to regional climatic conditions. Stadiums like the Arruda (in Recife), Mangueirão (in Belém), Serra Dourada (in Goiânia), Brinco de Ouro da Princesa (in Campinas) or Almeidão (in João Pessoa) reserved protected seats for club members and persons of higher social status only (Figure 1).

Figure 1: Serra Dourada stadium in Goiânia (author: Lamartine Reginaldo) (left), Brinco de Ouro da Princesa stadium in Campinas (author: Alfredo Morgante / EPTV) (centre) and Almeidão stadium in João Pessoa (source: Secom-PB)(right)

The shapes of the stadiums were very much similar as they were defined almost exclusively by their exposed reinforced concrete structural components. In fact, their formal expressions were defined when the concrete structures were completed. Local cultural identities were not taken into account as part of the design equation (De la Corte, 2009).

In fact, the spatial arrangement was poorly structured and socially constituted, expressed by a few socio-spatial sectors (Amorim, 1997, 1999): (a) stands and seats for supporters; (b) the football pitch; (c) the changing rooms; and (d) the press seats. But the way those sectors were related to each other tended to vary from one stadium to another, as there were not particular requirements to segregate athletes, supporters, club directors and the press.
1.1.1 The football habitus

There is close relationship between football and various aspects of Brazilian multifaceted society placing football at a hegemonic position regarding to other collective sports (Dam, 2007). The absence of precise requirements for stadium design (apart from the general need to place players and spectators within a confined structure) allowed the emergence of a deep relationship between club stadiums and supporters behaviour (Barreto; Nascimento 2011). Supporters of different clubs developed distinct patterns of behaviour closely related to the characteristics of the spatial structures of their respective traditional stadiums and their respective teams (Dam, 2007).

This football habitus (Elias and Dunning, 1992) is stronger in Brazilian cities with a long-term football tradition. Such a sports culture is inevitably associated with the success of the football clubs in local, national and international competitions, and its close association with fans over time, reinforcing the links between supporters themselves and supporters and their clubs. The most successful national and international clubs are located in Brazilian wealthiest regions (the states of Rio de Janeiro and São Paulo, followed by Minas Gerais and Rio Grande do Sul). These regions concentrate the largest groups of clubs supporters (Dam, 2007, p. 62) and express the richness and diversity of Brazilian football habitus.

However, the widespread power of Brazilian football culture reinforces strong bonds between local clubs and their supporters, regardless the importance of the so-called national clubs. This is evident in cities like Porto Alegre, Recife and Belém where the passion for local clubs is associated with a cultural identity and pride.

This scenario of cultural diversity, expressed in football styles, supporters behaviour and stadium diversity, characterizes the universe of Brazilian football before the organization of 2014 Brazilian World Cup. FIFA’s interference within this social context is described and discussed as follows.

2. The contemporary stadium: Space transformation and habitus alteration

For Rod Sheard (2005), over and beyond unifying game’s rules and procedures, FIFA has also imposed a strict standardization of the football stadium itself, particularly with regards to dimensions, public capacity, services and accommodation for delegations. This confirms the interest to create a universal stadium model (Geraint, Sheard, Vickery, 2007).

According to Sheard (2005), however, contemporary stadiums, especially those pertaining to FIFA standard, are part of the building type evolutionary process, not only in chronological terms, but also in relation to their programmatic complexity and social function (Figure 2). Currently, the FIFA stadiums are guided by three fundamental principles: (a) safety - mainly motivated by the example given by the English stadiums during the 1990’s, which reduced their numbers of accidents and vandalism; (b) income - in order to generate more visibility and thus more profit for the sports international market (i.e. brands of sports materials in general, sponsors and their own "brands" international teams); and (c) comfort - to ensure standards of comfort and in accordance with the responsibilities of organizations and international federations for establishing tickets price (De La Corte, 2009; Favero, 2009; Sheard, 2005).

In fact, stadiums’ owners are searching for an economical balance. They need to keep the interest of the club supporters and football fans in the sport itself in order to sell expensive tickets at the same time as they seek to ensure a growing presence of sponsors and powerful international media that publicizes athletes image and commercial brands. Television networks play a key role in the football industry by buying the broadcasting rights and becoming a partner in the business. In fact, broadcasting is the fourth axis of the contemporary football product, along with safety, comfort and profitability.
To see and to be seen in a football stadium is part of the show and a fundamental requirement for its design. In fact, large and unobstructed fields of vision are fundamental to guarantee good quality images and to support an efficient surveillance system. Indeed, while acts of vandalism and violence among supporters were common in a less supervised space such as the traditional stadiums, in the contemporary stadium the audience is under constant surveillance, either by the police force or private stewards, and by CCTV or press cameras. In fact, the FIFA buildings must serve as inhibitors of antisocial behaviour. As King (1998) has noted, the contemporary "panoptic arena" combines the possibility of a plenty visibility between players and spectators with the remote monitoring of those two groups by a third one: the responsible for the football show management.

Contemporary stadiums, in fact, are conceived as devices that support the production and reproduction of the international football cycle (Kaltenbach, 2005). As it is known, a stadium should attend the standards established by the FIFA guidebook (2007, 2011) to house an official international competition, such as the Football World Cup. FIFA's declared interest is to qualify and unify the international football arenas and that is achieved by frequently updates in its requirements and specifications. The document that ruled the design of the stadiums for the last FIFA World Cup was entitled Football Stadiums: Technical recommendations and requirements - it was published in 2011 and impresses by its accuracy.

It is important to read the FIFA Guidebook as the institutional expectations expressed in images and texts, with regards to space use and occupation and, consequently, to spatial configuration (Markus; Cameron, 2002). Its accurate and detailed textual and graphical regulations represents the subjacent spatial network that they conform. Its aim is to achieve an efficient device that assures an international quality. Moreover, it is the most obvious synthesis of the link between the dominant institution on the football (the FIFA itself) and the spatial distribution of their social demands.

2.1 FIFA's spatial model

The justified graph (Hillier and Hanson, 1984) seen in Figure 3 represents the main spatial units and socio-functional sectors (Amorim, 1997; 1999) established by FIFA Guidebook as circular nodes and the connections between them, as lines. The graph is justified from buildings' outside.
FIFA Guidebook requires, in a very clear manner, spatial structures that separate different groups of users. The social categories distinctions are established right at the access point to the stadium. Moreover, there are only a few connections between socio-functional sectors (Amorim, 1997; 1999). For example, spectators are never allowed to go through other sectors or spaces, such as the pitch field or the mixed zone (where press is free to interact with players), which are constantly under surveillance. The spaces designated to football players, coaching staff and referees are situated in a very shallow position with regards to stadium access. Their users enter and leave the building without major risks of undesirable encounters with supporters and press, for example. Their interface only happens in programmed situations, such as in the mixed zone, where the space layout indicates how distinct social groups should behave, defining paths, separations and visual controlled encounters among the athletes (the most protected group) and journalists (the most interested in social encounters).

The most distinguished sectors – the very important person (VIP) and “very-very” important person (VVIP) – are deeper and more complex when compared to the remaining ones, and their accesses are isolated from the general public ones, strongly supervised and controlled. VIPs and VVIPs have privileged access to the mixed zone and some outstanding locations, such as the awards tribune. The sectors’ configurations are conceived to reinforce social distinctions and status differentiation of their users. FIFA agents and stewards complete the security system, if space itself fails to provide the necessary surveillance and control.

This highly controlled environment, as highlighted above, is part of a managing strategy to strengthen the sport – football – as a global product and, to a certain extent, for shaping the behaviour of a new generation of clubs' and national teams’ supporters. If hooliganism must be extinguished from the world of football, other modes of supporters' behaviour are under threat by the universalization of the spatial structure of FIFA stadiums. This silent effect has been widely discussed by social scientists (Elias and Dunning, 1992) and is clearly present at the set of new stadiums designed and built for the 2014 FIFA World Cup.

3 New Brazilian stadiums: when form does not follow function

The 2014 FIFA World Cup was hosted in twelve Brazilian cities, where twelve international standard football stadiums were adapted or built. They present multiple formal expressions, as seen in Figure 4, but, as it will be demonstrated below, this apparent diversity of architectural features lays exclusively at the surface. The long and detailed prescriptive text that preceded the design process and the proper nature of the football game reinforced certain similarities.
In fact, the Brazilian 2014 stadiums present only a few plan arrangements, which emphasize the required adjacency between the sets of stands and the football pitch itself, as well as, its geometry – form and dimension. This is because the layout options of the grandstand elements are defined by the geometry of the football pitch and the fundamental nature of the game – two teams defend and attack the goals located at the opposite shorter sides of the field, and geometrical requirements for a full vision from the surrounding stands.

Figure 5 shows a few diagrams representing stadium plan arrangements. Their central core that groups the football pitch and its surrounding stands is less variable, whereas the geometry of the envelope is more diverse. Furthermore, the location of the circulation cores – stairs, ramps and lifts, and their access from stadium’s outside seems to be relevant to their overall configuration and formal composition.

Figure 5: 2014 World Cup Stadiums plan arrangements (from left to right): Arena da Baixada, Curitiba; Arena Pantanal, Cuiabá; Estádio Nacional, Brasília; Arena Pernambuco, São Lourenço da Mata. (source: Nascimento, 2013)
The relationship between these architectural elements seems to establish the fundamental principles for stadiums’ design. Figures 6 to 10 show a series of diagrams that represent the relative position of the football pitch, stands, access point and roof found in the 2014 FIFA World Cup Stadiums. Each diagram was then encoded and combined to describe the composition of each stadium (see Chart 1).

**Figure 6**: Schematic sections: access – red line; envelop – purple line; roof – blue line (source: Nascimento, 2013)

**Figure 7**: Plan diagram according to stands’ arrangement (source: Nascimento, 2013)
Figure 8: Plan encoding according to the envelop (source: Nascimento, 2013)

Figure 9: Section encoding according to the access to the stands (source: Nascimento, 2013)

Figure 10: Section encoding according to the envelop, roof and stands (source: Nascimento, 2013)

Chart 1 synthesises the results and reveals twelve distinct combinatorial arrangements without any association between the observed architectural features. It is a simple, but clear demonstration that the field for designer composition lays at the overall external image of the building, as the restrictiveness imposed by FIFA Guidebook reduces the possibility of generating spatial arrangements other than the ones prescribed.
It seems that the apparent complexity of the overall composition of the stadiums only depends on a few design strategies, ordered from the degree of restrictiveness: (1) the space configuration according to FIFA’s regulations; (2) the relative position of the stands according to the shape of the football pitch and the restrictions on visibility; (3) the relative position of the accesses, varying according to local topography and FIFA’s regulations; (4) the shape and materials of the envelope and roof. In sum, FIFA imposes, on one hand, strict regulations that impacts space configuration and, on the other hand, does not restrict formal expression. The inner core of the stadium is globally defined, but their image can be easily associated to distinct values, such as cultural heritage, local landscape or knowledge and technology.

A new stadium is a major economical investment, which has a wide number of impacts to the environment in which it operates. Appealing titles and images allegedly associated with aspects of local cultures is an evident attempt to “customize” the generic object to a local audience and to reinforce their self-steam.

Therefore, it is the built form that is deliberately used as an element of communication, mainly from the marketing point of view. The Brazilian stadiums are a clear example of this strategy (see Figure 4). The majority of the 2014 Brazilian stadiums are associated to local cultural aspects of the host cities, such as the coastal sand dunes of Natal and the tropical vegetation of the Pantanal region.
4. Substituting *habitus* for images

Having presented the basis of our arguments, it would be tempting to put forward the idea of a pragmatic disjunction between interior space and exterior form in the same terms as posed by Robert Venturi (1966), Aldo Rossi (1966), Charles Jencks (1977) and Rem Koolhaas (1995), just to cite some relevant references. But design strategies used for South Africa (2010), Brazil (2014) and Qatar (2018) World Cup stadiums do not seem to be based on theoretical reasoning, but on the requirements of a global real estate market solution. In fact, the signature of a “starchitect” (Jencks, 2005) is not only unnecessary, but the presence of a designer is somehow irrelevant.

As it is observed, most of the stadiums were designed by architectural offices specialized in football stadiums, not necessarily producers of any deeper theoretical discourses. As a matter of fact, since the spatial structure is already defined by FIFA, they are mainly responsible for the efficient pragmatic use of form without worrying with their own design signatures. In other words, these architectural offices are not concerned with building up a consistent theoretical framework.

For example, the architectural office GMP (von Gerkan Marg Architekten und Partner) designed the Manaus, Belo Horizonte and Brasilia stadiums. The same office designed new stadiums in Kiev, in Ukraine and Cape Town, Durban and Port Elizabeth, in South Africa). Their envelopes are not only distinct, but do not reinforce any design signature. Similarly to companies that massively develops consumer goods, design signature is a secondary issue, as long as the relationship with their customers - the World Cup's host cities - guarantees that their goals are going to be attended: profitable publicity, public attendances and global distinction in global cities market.

What must still be understood, though, is why do formal choices for stadiums envelopes are so specific, bold in some cases or so generic or plastically parsimonious in others? In other words, why in certain exemplars the visual appealing character is more evident than in others?

4.1 The football club factor

Considering the long Brazilian football traditional and international recognition, it would be expected that the austerity and rigour brought by FIFA will alter the *habitus* and ethos of Brazilian football. Considering the idiosyncrasies of football club cultures already discussed, one would expect that the design of new football stadiums would be adapted to certain demands, such as those required by football clubs, represented by directors and supporters. After all, the football capital that binds them together is the quest for victories and titles. Could it be possible to keep supporters’ *habitus* alive, although complying with FIFA’s general standards?

Only three out of the twelve projects selected for 2014 are owned by a football club: the Baixada Stadium, in Curitiba, owned by the Atlético Paranaense; Beira Rio, in Porto Alegre, by the International of Porto Alegre; and Itaquerão, in São Paulo, by the Sport Club Corinthians Paulista. Curiously, their design does not explore culturally appealing images. On the contrary, architectural and structural components compose their overall image. It seems that traditional football clubs do not need to explore any strong image, apart from their own colours and logo.

The remaining stadiums are publicly owned, without association to any football club. Four of them are adaptations or replacements of existing stadiums, references for local football cultures: the Castelão Stadium, in Fortaleza; Fonte Nova, in Salvador; Mineirão, in Belo Horizonte and Maracanã, in Rio de Janeiro. These are cities with a strong football tradition and home of national and internationally known football clubs. Their new stadiums either keep their external appearances, or seem less concerned with any association to an iconic architectural image.

Considering the five new public stadiums, three are in cities without a long-term football tradition: Manaus, Cuiabá and Brasília. Such condition is considered a threat to the ability to remain sustainable after the end of the World Cup 2014. Their architectural design assumes an imagistic appeal. This is the case of Manaus and its stadium that eludes a native Indian basket.
The Arena das Dunas (Dunes Arena), in Natal, lies in the same building site as the modernist local stadium, demolished to give place to an entirely new building. The whole football complex does not keep any reference with regards to its precedent, an important symbol to city’s football culture, but to the sand dunes, part of Natal’s natural landscape.

But the extreme case is the example of the City of Recife. Located at São Lourenço da Mata, a neighbouring city, part of the Metropolitan Region of Recife, the so-called Arena Pernambuco is part of a detailed urban design, conceived as a planning neighbourhood that includes residential and commercial areas, as well as the state university (Brandão, 2012). The stadium was not designed to be the home of any local club. However, its façade is formed by lighting panels that may adopt any combination of colours, therefore, adjusting to the colours of the three main football clubs of Recife.

It becomes evident that the contemporary football stadium is an architectural type designed for maximum social efficiency, as it serves as a spatial device that accurately and rigidly allows the performance of programmed social events. But withal it is a highly convincing product when every time it is necessary to represent the desires and aspirations of their audiences.

5. Concluding remarks: a gadget building

Having explored the social, spatial and formal aspects subjacent to the design of new football stadiums, it is possible to draw some general conclusions. Firstly, let us consider that the architectural envelope is part of a strategy to conceal the authoritarian character of the socio-spatial properties of the type (King, 1998), leaving space for architectural self-expression that varies from expressing symbolic images to supporting any marketing strategy.

This firmly contrasts with the traditional Brazilian football stadiums, conceived to explore the expressiveness of their concrete structure and prized by the sheer interest to provide a robust structure to survive through time, both symbolically and physically. In fact, recent projects make use of fragile materials that are easily mounted, but ephemeral. As a consequence, if the covers and envelopes are modified, the identity of the new stadiums is lost. What is left is the monolithic concrete structure laid at the very core of the building, composed of the stands, girders, corridors and other spaces fit under and between these main elements, designed without any concerns with their expressiveness. The building core, in fact, reflects FIFA’s requirements.

As discussed previously, the relationship between form, function and space within the limits of the contemporary stadium type cannot be fully explained, for example, within the limits of Venturi’s theoretical reasoning, as the contemporary stadium is neither a “duck” nor a decorated shed. The “duck” is an architectural insertion into the shape of another object. The spatial specificity of the stadium does not include this feature in a mandatory way - it is a spatial structure that can be enveloped by a physical one, but not always. For the same reason, the stadium is also not a decorated shed because the programmatic and spatial precision is rigid, is not free, as the shed idea presupposes.

The same could be said with regards to the idea of bigness presented by Koolhaas (1995), as the relationship between the core and the envelop itself is distinct from the notion of an interface membrane that surrounds a series of events - related or not to football - that fit within the building. Brazilian examples demonstrate how the relationship between pragmatic elements of usability and plastic semantics are variable. And this is because the contemporary stadium is intentionally conceived as a product. In fact, it may be seen as a device (Markus, 1987) and a product (Easterling, 2005), but also as an icon when it is convenient or necessary (Sudjic, 2005).

The football stadium is part of a worldwide customizing phenomenon that prevails the consumer goods production, similarly to what is found in the car industry, for example, that produces a wide variety of models over the same mechanical platform. Each model, designed to specific targeted consumers and named accordingly, assembles distinct bodies over the same platform, as identified in Brazilian 2014 World Cup stadiums.
Similarly, cell phones and tablets are mounted on a similar technology, with components produced by a few global companies that always repeat the settings from different manufacturers. Similarly, the multipurpose stadiums share a common program structure amongst the various models - or operational systems and applications - and concentrate, potentially, numerous functions. Electronics make use of plastic substrates with colour variation or offer a range of customization options for the visual interface of its operating systems and for the coverage of their carcasses as well as the stadiums make use of their envelopes. In this sense, the building is conceived as marketable unnecessary product or a contemporary gadget (Baudrillard, 1968; 1970), and not as a timeless urban facility.

Being a gadget building, the FIFA stadiums are "spatial products" according to Easterling (2005), classifying devices according to Markus (1987, 1993) and efficient authoritatively (King, 1998) as emerged within the context of the modernisation of the State along the eighteenth and nineteenth centuries (Foucault, 1975). At the same time, the apparent formal freedom, which is expressed on their surfaces transforms into objects of desire of a generic consumer audience, since they create common sense images without a signature or a style. In the end, it is a mechanism of compensation of such authoritarianism and globalized distancing from a diversity of football habitus.

References


