



## Managing racial diversity: Positional segregation in South African rugby union in the post-apartheid era

*Gerindo a diversidade racial: Segregação posicional no rugby sul-africano na era pós-apartheid*

**Bernard Cros**

---



**Electronic version**

URL: <http://cea.revues.org/1154>

DOI: 10.4000/cea.1154

ISSN: 2182-7400

**Publisher**

Centro de Estudos Internacionais

**Printed version**

Date of publication: 5 décembre 2013

Number of pages: 153-176

ISSN: 1645-3794

**Electronic reference**

Bernard Cros, « Managing racial diversity: Positional segregation in South African rugby union in the post-apartheid era », *Cadernos de Estudos Africanos* [Online], 26 | 2013, Online since 02 December 2013, connection on 01 October 2016. URL : <http://cea.revues.org/1154> ; DOI : 10.4000/cea.1154

---

The text is a facsimile of the print edition.



O trabalho Cadernos de Estudos Africanos está licenciado com uma Licença Creative Commons - Atribuição-NãoComercial-Compartilha Igual 4.0 Internacional.

**MANAGING RACIAL DIVERSITY: POSITIONAL  
SEGREGATION IN SOUTH AFRICAN RUGBY UNION  
IN THE POST-APARTHEID ERA**

**Bernard Cros**

Université Paris Ouest Nanterre La Défense  
Unité de Formation et de Recherche de Langues,  
Littératures et Civilisations Étrangères  
Département d'Anglais  
200, avenue de la République  
92000 Nanterre, France

[bernardcros@u-paris10.fr](mailto:bernardcros@u-paris10.fr)

### **Managing racial diversity: Positional segregation in South African rugby union in the post-apartheid era**

*This article intends to delineate the evolution of South African rugby union elite teams since the end of apartheid in the 1990s, when racially inclusive sports appeared, particularly the involvement of black players in what was often described as an essentially “white man’s game”. By relying on theoretical work on the notion of “centrality” and extensive statistical analysis, this article describes the limited transformation of South African rugby, both quantitatively and qualitatively, as blacks are generally confined to the “peripheral” and arguably less-important positions of the teams. In contrast, whites keep a firm control over positions that are both symbolically and functionally central, a pattern known as “positional segregation” or “stacking”.*

Keywords: rugby union, race relations, discrimination, South Africa, stacking

### **Gerindo a diversidade racial: Segregação posicional no rugby sul-africano na era pós-apartheid**

*Este artigo pretende perspetivar a evolução do rugby de elite da África do Sul desde o fim do apartheid nos anos 1990, quando apareceu o desporto racialmente inclusivo, particularmente a participação de jogadores negros no que foi descrito por muitos essencialmente como o “desporto do homem branco”. Baseado num trabalho teórico sobre a noção de “centralidade” e num vasto estudo estatístico, o artigo descreve a transformação limitada do rugby sul-africano, tanto quantitativa como qualitativamente, na medida em que os negros são geralmente confinados às posições “periféricas” e menos importantes das equipas, enquanto os brancos mantêm um controle firme sobre posições que são simbólica e funcionalmente centrais, um padrão conhecido como “segregação posicional” ou “stacking”.*

Palavras-chave: rugby, relações raciais, discriminação, África do Sul, stacking

Recebido 11 Novembro 2012; Aceite 7 de Outubro de 2013

In the contemporary world, sport has been described as a powerful means of identification to an otherwise abstract “Nation”, as one possible points of reference of “imagined communities” (Anderson, 1991). When South Africa chose the path of multiracialism in the 1990s after centuries of segregation, it had to invent itself an identity as a racially diverse nation, and the potential of sports as a tool of change to that effect was emphasized, notably by Nelson Mandela who used rugby as an instrument of reconciliation (Carlin, 2008). Since then, everyone irrespective of skin colour has indeed been legally allowed to compete for a place in South Africa’s elite sports squads. However, this supposed sport to be first an object of change, defined essentially by its response to the country’s new racial dispensation.

The cultural and historical centrality of white-dominated rugby union in South Africa makes it an interesting measure of the evolution of new political and racial imperatives such as “reconciliation” and “transformation” to which it was submitted. Empirical observation suggests that non-whites, who represent 90% of the general population and about half of all rugby players, account for a small minority of professional players, and that the assignments to the ten playing positions of a rugby team vary according to racial affiliation: blacks are heavily overrepresented at wing while whites enjoy a monopoly over lock, number 8 and fly-half. Such “positional segregation”, or “stacking”, is defined as “players from a certain racial or ethnic group being either over- or under-represented at certain positions in team sports” (Coakley, 1998, p. 257). This phenomenon was originally formalized in the United States after Loy and McElvogue (1970), who concluded that in baseball and American football, positions identified as spatially “central” were likely to be filled by whites and those identified as “peripheral” by non-whites. Centrality studies drew on Blalock (1962) as well as on Grusky’s (1963) study of formal structures of baseball organizations, and defined centrality in sport largely in relation to the impact of playing positions on results, which led to the notion that “minorities are excluded from positions with the greatest opportunity for determining the outcome of the competition” (Johnson & Johnson, 1995, p. 105). Since the 1960s, many researchers have pointed to patterns of racial disproportion in US team sports (Eitzen & Sanford, 1975; Leonard, 1977 and 1987; Curtis & Loy, 1978; Best, 1987; Jones, Leonard, Schmitt, Smith & Tolone, 1987; Lavoie & Leonard, 1994; Johnson & Johnson, 1995; Smith, 2000; González, 2002; Hawkins, 2002; Medoff, 2004, e.g.).

As has been remarked about British soccer (Norris & Jones, 1998, p.181-182) however, the transfer of theories originally stemming from, and applied to, US sports and society entails problems of adaptation to other contexts. Similar stud-

ies on other sports were conducted in other parts of the English-speaking world (Maguire, 1988 and 1991; Melnick, 1988; Hallinan, 1991; Melnick & Thomson, 1996; Long & Spracken, 1996, e.g.), but rugby union centrality has been the subject of only two contributions of note (Maguire, 1988 and 1991, looked at some elements of English rugby; and Melnick & Thomson, 1996, studied aspects of the New Zealand case). Yet rugby union is a likely candidate for the analysis of stacking as it involves considerable player specialisation, a wide variety of body types (Reilly, 1997, Nicholas, 1997) and “fixed zones of role responsibility attached to specific positions” as was noted by Edwards (1973, p. 213) about American football and baseball.

This article will first establish a centrality model for rugby union to define which positions are central or peripheral, before testing it in relation to South African rugby union by looking at the participation of players according to race and position in the three major types of competition: international (‘test’) matches, Super Rugby and the Currie Cup. Analysis of the racial composition of top teams will provide evidence about the involvement of non-whites (Do blacks play less in top competitions? To what extent are blacks confined to “peripheral” positions?). Hypotheses as to the reasons for such evolution (such as the stereotypes underpinning the reluctance of the rugby “establishment” – from board seats to coaching positions – to open up the “white man’s game”, lack of popular support inside the black population, and socio-economic considerations limiting the pool of available non-white players) will be offered, leading eventually to a reassessment of the status of elite rugby in contemporary South Africa. Attention will also be paid to the so-called “Anglocentric hypothesis” (Hallinan, 1991), which points to racial and cultural prejudice influencing coaching and selection processes in favour of whites in English-speaking countries as stacking has been linked to the inferior social and economic status of non-whites in such contexts.

## Rugby union centrality

### Theorizing rugby union centrality

The starting point for the following rugby union centrality model is Grusky’s (1963) seminal definition of centrality as depending on (1) spatial location on the field, (2) types of tasks performed in each position and (3) rate and range of interaction between players and/or players and management.

### 1 Spatial centrality

Figure 1 is a diagram of how a rugby team is presented. The 15 players, arranged into ten different positions, are conventionally numbered from 1 to 15 (the standard terms of the International Rugby Board were used). Players 1 to 8, known collectively as the forwards, are shown in a scrum position. Players 9 to 15 are the backs. Five players are spatially located at the centre of the team: hooker, number 8 (or eighthman), scrumhalf, fly-half and fullback.

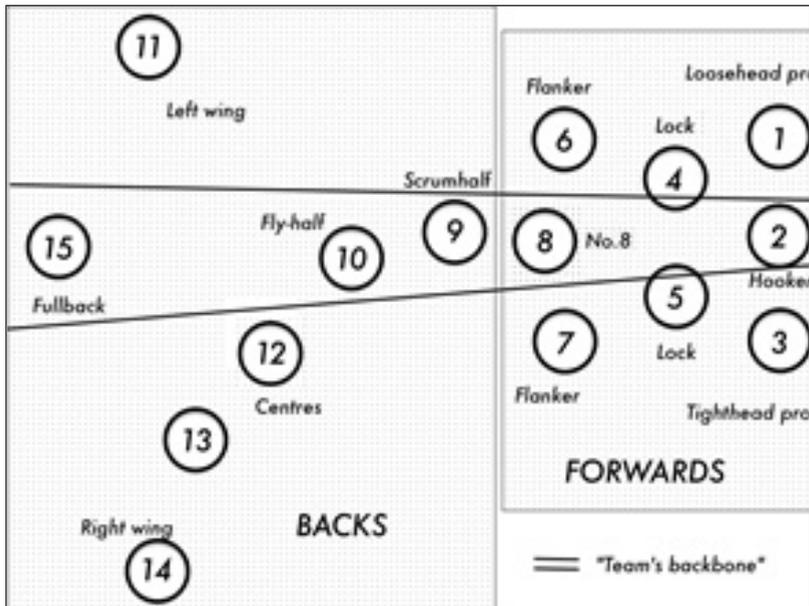


Figure 1: Rugby union players' positions

### 2 Tasks

The second criterion points at functionality (the tasks performed and their impact on team results): the higher the influence on the result of a game, the more central a position. In a comparison with soccer, Maguire remarked that in rugby union "the functions of positions ... are more clearly demarcated" (Maguire, 1988, p. 102). According to the South African Rugby Union's (SARU) website, the "two units [backs and forwards have] ... different basic responsibilities although there are no hard and fast rules about who may score or who may do what" (SARU, 2011). Rugby players are thus both specialists (with specific tasks to accomplish at their position) and generalists (sharing similar functions in offence and in defence).

### 3 Interaction

The rate of interaction in rugby can be measured in different ways but it essentially involves passing and kicking the ball, and contacts, either physical or not, with teammates, opponents and management. Interaction criteria serve to measure the intensity of performance at each position. If all players pass the ball, tackle and speak, some pass, tackle and speak more than others (“high” vs. “low interactors” to use Grusky’s terminology).

### Methodology

The main tasks and abilities of each position were defined by using six different sources. Though by all means subjective, these views can be considered as reliable as they lay down elements that are well established and generally recognized as valid in the rugby world. They include the International Rugby Board’s Beginner’s Guide to Rugby Union (IRB, 2008), two guides published by the Rugby Football Union (referenced as RFU, n.d.), English rugby’s governing body, a position guide (RFU PG, n.d.) and a positional skills guide (RFU PSG, n.d.), which define the “key abilities” for each position. They were augmented by the BBC website, which contains the views of nine international players from the British Isles, Australia, New Zealand and South Africa about their respective positions, by a similar set of assessments by 15 French internationals published in the French weekly magazine *L’Express* just before the 2007 Rugby World Cup, and finally by the personal website of a South African coach, Ross Williams, who works for the University of Cape Town U20 team, in which he describes and discusses each position at length. Other interviews and comments by prominent players and coaches were also taken into account when necessary. The terms and expressions used to describe each position were listed, quantified and classified into seven categories, in addition to spatial centrality (Table 1):

- two involve contact with the ball (with hands or feet);
- two involve contact with both opponents and teammates (tackling and rucking, interactive skills);
- two relate to cognitive qualities (decision-making and strategy, vision);
- one relates to physical qualities (“strength”, “stamina”, “speed”, etc.).

The descriptions were translated into a 5-point Likert scale meant to assess the importance of each item at each position in comparison with the fundamentals of the position (kicking may be useful for a flanker but is less important than his tackling ability), and with the needs requested at the other positions (if a flanker occasionally kicks the ball, the fly-half is more likely to kick). A 1 indicates that the item is virtually useless at a position, a 2 indicates that it is rarely useful, a 3

that it is sometimes useful, a 4 that it is often useful, and a 5 that it is essential. This led to the establishment of a centrality score (CS): the higher the CS, the more central the position.

*Table 1*  
Centrality score (CS) of positions in a rugby union team according to factors of spatial centrality and of needed and displayed skills (total points awarded: 286)

	Factor / Position	Spatial centrality	Handling skills	Foot skills	Tackling and rucking	Interactive skills	Decision-making skills	Vision	Physical impact	Centrality score
1	<i>Fly-half</i>	5	5	5	4	5	5	5	3	<b>37</b>
2	<i>Scrumhalf</i>	5	5	5	3	5	5	5	3	<b>36</b>
3	<i>No. 8</i>	5	4	3	5	5	4	4	5	<b>35</b>
4	<i>Hooker</i>	5	4	3	5	5	4	3	5	<b>34</b>
5	<i>Full-back</i>	5	4	5	2	4	4	5	3	<b>32</b>
6	<i>Centres</i>	3	4	3	5	3	3	2	5	<b>28</b>
7	<i>Flankers</i>	3	3	2	5	3	3	3	5	<b>27</b>
8	<i>Locks</i>	2	2	1	5	2	2	2	5	<b>21</b>
9	<i>Wings</i>	1	3	3	2	2	2	3	3	<b>20</b>
10	<i>Props</i>	1	1	1	4	2	1	1	5	<b>16</b>
	<i>Mean score</i>	3.5	3.5	3.2	4.0	3.6	3.3	3.3	4.2	<b>28.6</b>

## Results and discussion of model

Spatiality seems fundamental to define centrality as the top five positions in that category occupy the top five ranks and score more than the average of 28.6 points. This confirms that “the factor of centrality itself is significant only in so far as greater outcome control and leadership responsibilities are typically vested in centrally located positions since actors holding these positions have a better perspective on the total field activity” (Edwards, 1973, p. 209). However, the further down we go into the table, the less multidimensional positions are, and the less their strategic centrality is emphasized. Rugby people regularly use the organic metaphor of the “backbone” or “spine” about these players: for Jake White, who coached the Springboks to the world champion title in 2007, they form the “team’s backbone” (White, 2011), former France fly-half Christophe Lamaison believes “in the theory of the backbone 2, 8, 9, 10, 15” (*L’Express*, 2007), which Williams (2009) makes his as well. Like the central nervous system, these five players process, then relay the information for the “organs” – themselves and the ten other players – to function properly and for the benefit of the “system” – the team.

The fly-half, the most central position, is compared to vital organs in a body. He is “the heartbeat of the team” (RFU PG, n.d.), or according to the 1920s English flanker Wavell Wakefield, “the *brains* of the attack” (Wakefield & Marshall, 1927, p. 213. Original emphasis). The fly-half, often nicknamed the “pivot”, is “arguably the most influential player on the pitch” (RFU PG, n.d.). He occupies a thinking and leadership position, “a pivotal role with the responsibility of deciding whether the backs should run with the ball or whether he should kick to gain the best advantage for his side” (SARU, 2011). As “the general of the backline and frequently of the whole team” (SARU, 2011), “the tactician who, apart from his own game, will have a share in most of the other tactical moves” (Craven, 1977, p. 22), he is “generally the main decision-maker” (Williams, 2009), and likened to similarly central positions in other sports, “a point guard in basketball, the midfield general in soccer or the quarterback in American football” (SARU, 2011). The player’s intelligence and adaptability are emphasized: he must “read the game very well” (Williams, 2009) and “adapt what was drawn up on the blackboard to match circumstances” (*L’Express*, 2007). As an advice to would-be fly-halves, Williams says: “Use your head and play according to what you see in front of you” (Williams, 2009). His centrality also derives from his traditional role as placekicker since he is generally in charge of kicking the penalties, try conversions and dropped goals that feed the score and bear directly on the outcome of the game.

The fly-half’s closest partner on the field, the scrumhalf, is also the second most central player. Both are often considered together, almost as a special unit (the halfback pair). As a hinge between forwards and backs, they are the priority players to call offensive plays, so both need decision-making and communication skills. As “the talkers and the tacticians of the side” (BBC, n.d.), they occupy the most interactive positions, acting as the prime relays between management and players, often requesting information from coaches on the side-lines. “At the centre of the action” (former France scrumhalf and coach Pierre Berbizier, *L’Express*, 2007), the scrumhalf is also “the first person with [his] hands on the ball” (RFU PG, n.d.): he feeds it into the scrums and “recycles” it when it is at a halt, allowing the play to move on. He is “a decision-maker who controls the tempo of play” (Berbizier, *L’Express*, 2007), choosing to kick the ball, pass it or run with it. The scrumhalf is also considered as the “boss” of the forwards whom he “coordinates” (RFU PG, n.d.), especially when their heads are down in a contest for the ball. In scrums, he works closely with two forwards, the hooker (who heels back the ball the scrumhalf put in the scrum) and the eighthman (who controls the ball out of the scrum).

These forwards rank third and fourth partly because of their interaction with the halfbacks. The eighthman, “a key decision-maker” with “many roles to fill” (Williams, 2009), scores high in most categories. He is the forward closest to the backs and must ensure continuity of play. He has to combine power, size and mobility, needs good hands to fetch high balls, has to be a good runner to cover his defence on opposing kicks and intervene quickly in rucks. He too stands out as a “thinking position”, “a central decision-maker in the spine of the team” (RFU PSG, n.d.) because he is in a pivotal place at the base of the scrum, where he may decide to pass the ball, run with it or control it with his feet.

The other central forward, the hooker, influences team performance directly by “coordinating events at the major possession platforms” (RFU PSG, n.d.): he throws the ball in the lineouts and heels it in the scrums. He also “is responsible for the binding [of front-row players] before the impact” (France prop Sylvain Marconnet, *L'Express*, 2007) and for the coordination of the front and second rows, “with whom communication is fundamental... He must show leadership and be an example in battle to carry his teammates in his stride... It's an extraordinary position which requires... clear-headedness” (former France captain and hooker Raphaël Ibañez, *L'Express*, 2007). Ball possession is fundamental to the game's outcome since without the ball, it is impossible to score points. However his functions are essentially confined to close contact situations, which limit his global vision.

The entire field can be seen in one embrace from the last central position, fullback. The fullback “has time and space to see the game unfold” (RFU PSG, n.d.), but contrary to number 8 and hooker, he also generally remains far from the line of advantage, his play-making initiatives are not as frequent as those of the halfbacks, and he doesn't tackle that often. However, he is regularly described as “the last line of defence” and sometimes as “the closest thing rugby has to a sweeper in defence” (BBC, n.d.) – a central position in soccer (Maguire, 1988) –, covering for line breaks and long kicks, and kicking the ball clear under pressure. His functional centrality – the “quick ... tactical decisions” (RFU PSG, n.d.) he takes – has to do with his primarily defensive tasks and his counter-attacking skills, hence his relatively lower ranking. He must have “good concentration and cool nerves”, but he should also “endeavour to add an element of adventure and spontaneity to the game” (Williams, 2009).

The other five positions are peripheral, getting no more than 3 points in any category, except for the top three who score high in tackling and physical impact. They are “low interactors” (Grusky, 1963), whose functions are to implement rather than create. None of them is praised for his strategic or tactical intelli-

gence, making important choices on a regular basis, but rather for their situational capacities in specific contexts with short-term ends. The flanker is the player with “the fewest set responsibilities” (RFU PG, n.d.), but he has high rates of global interaction and the largest zone of intervention. Though he may carry the ball in attack and jump in lineouts, he is “primarily a defensive player” (former New Zealand number 8 Zinzan Brooke, BBC, n.d.), who chases down the opposing fly-half (he is often the team’s best tackler) and tries to turn the ball over to his side in rucks. These are important functions, but not considered as fundamental as leading the attack. As for locks, the tallest and largest players on the team, their “basic role [is] to lock and push in the scrum, win lineout ball and secure ball possession from restarts” (former England lock Martin Bayfield, BBC, n.d.) and they are seldom involved in overall strategy. The most spatially peripheral back position is wing (or winger), a “fairly lonely position” (former Wales winger Ieuan Evans, BBC, n.d.) “too far from most of the play to be able to control his side to the best advantage” (Wakefield & Marshall, 1927, p. 277). All descriptions of wingers insist on pace as their primary, if not unique, necessary quality: “First and foremost, you need pace” (Evans, BBC, n.d.). They should be “energetic and restless” and “elusive with the ball” (Williams, 2009). Their role as finishers could confer a central role on them, but though they may top the statistics they are not the only ones to score tries. Props come last. They seldom handle the ball and never kick it, and have executive, not decisional, abilities, relying almost exclusively on their strength and weight: “A prop’s main role is to scrummage, support [jumpers] in the lineout, tackle and hit the rucks and mauls” (former England prop Jason Leonard, BBC, n.d.).

Two groups therefore seem to emerge: one including five central players needing superior cognitive qualities, another including ten peripheral players, who are more about execution than decision-making. However, one of the difficulties to define centrality in rugby union is that when the ball is in play assigned positions and the attached “zones of role responsibility” (Edwards, 1973, p. 213) become less relevant because they are not as fixed as in baseball and American football. Because the ball can keep moving for more than just a few seconds, the game is very fluid so that though players are more or less likely to perform certain tasks because of their position, they also have to react according to circumstances, and do whatever play dictates. Many missions are not the absolute privilege of one or several players or positions. For example, kicking is not reserved to only one player and any player can virtually score tries. Finally, interaction contributes to blurring the centrality hierarchy because each player may be in contact with all of his teammates, by passing the ball to, or receiving it from, any of them. Because

the ball can go anywhere, players must be very mobile as their zones of intervention vary. For instance, any player can score a try if he happens to be in the right place at the right time, whereas the ball follows a very limited number of possible circuits in American football or baseball. Let us now see how and if this model applies to South African rugby.

## The South African case

### Sample

Participation data (number of players, games played and game time) was collected from the match sheets available on the SARU website. Information from other rugby websites (such as *itsrugby.uk* and *scrum.com*) and the South African rugby annuals (1999-2010) was also used. Three types of first class competition games were studied over a twelve-year period:

- International, or test, rugby played by the national team, the Springboks;
- Super Rugby, founded in 1995, originally called Super 12, then Super 14 in 2006 and Super Rugby since 2011, currently involving 15 professional franchises from Australia, New Zealand and South Africa. Until 2005, South Africa had four teams and has had five ever since; and
- The Currie Cup, the main domestic competition played by 14 provincial teams.

Players were sorted into two groups, white and black<sup>1</sup>, by resorting to individual and team photographs drawn from books and Internet websites. While mistakes are always possible, great attention was devoted to the accuracy of this classification. The rare white foreigners (Europeans, Argentines, New Zealanders, Australians and Namibians) were included, but the few Pacific islands players from Fiji, Tonga and Samoa (four in Super Rugby, thirteen in the Currie Cup) were not because Melanesians and Polynesians do not fit into any of the racial categories of the South African context. Positions were inferred from the numbers awarded to each player on match sheets, a system that is still rigidly enforced in rugby union (see Figure 1). When a player occupied more than one position in

<sup>1</sup> We acknowledge that these categories are a legacy of apartheid with no scientific basis, but they are still used in official government literature, and inform society and mindsets to the core. They are also needed to assess any degree of racial transformation. Phenotypical identifications are still frequent in South Africa and often entail conclusions about an individual's moral, physical or psychological qualities despite the advances entailed by democratisation. Under the influence of the Black Consciousness movement, the term 'black' has come to describe anybody who is not white and was oppressed during the anti-apartheid struggle. I chose to use it for practical reasons, though in addition to black Africans it includes the so-called 'Cape Coloured', or 'Coloured', population, a diverse mixed-race group specific to South Africa, and sometimes also South Africans of Indian origin.

the course of a season, he was attributed the position where he recorded the largest game time. Temporary and final sending-offs were ignored. Averages were used as a working basis because teams did not play the same number of games. Finally, the periods considered varied according to available data: team line-ups were included for all competitions since 1998 (the first year when data was readily available), but minutes played were available only from 2002 to 2009 for the Currie Cup, and from 2003 to 2009 for Super Rugby, which explains why different statistical series were used. Between 1998 and 2009, 3,028 Springbok caps (appearances) were awarded in 150 matches to 161 different players (124 whites and 37 blacks), who played a total of 180,000 minutes. Between 2003 and 2009, the five South African Super Rugby franchises played 402 matches and awarded 8,422 caps to 1,010 different players (including 207 blacks) for a total of 482,400 minutes (blacks: 97,797). In that same period, 722 Currie Cup matches were played but a few match sheets missed one or several players, and four sheets could not be traced altogether. During that span, 1,381 different players (including 283 blacks) played at least one game, twenty of them playing for two teams in the course of one season. If each player is counted for every season he plays in, a total of 3,128 seasons were registered (991 by black players). 29,866 caps (out of a potential 31,900) and 1,723,920 minutes were actually studied.

## Results

### *Teams' racial make-up*

Seventy-five to eighty per cent of South African rugby professional players are white though whites form only 9 per cent of the general population<sup>2</sup>. Only a handful of non-whites played professionally until the early 2000s so that even a limited increase was bound to be massive, but Table 2 reveals how spectacular nature the rise was between the periods 1998-2002 and 2003-2009 (Springbok players +49%, caps +130%, game time +103%, Super Rugby players +153%, caps +181%). Overall, blacks play fewer games and spend less time on the pitch in comparison with their presence in squads, a sign that their contribution is deemed less valuable compared to that of whites. Surprisingly perhaps, such difference was inversely proportional to the level of competition: the widest though limited gap was found in the Currie Cup – which has the largest amount of blacks – where despite accounting for almost 25% of all players, blacks got only 22.5% of caps and 22.8% of game time. In Super Rugby, the difference was limited to less than one point (20.5%, 19.7% and 19.6%) and black Springboks were treated

<sup>2</sup> Blacks: 79.5%; whites: 9%; Coloureds: 9%; Asians: 2.5% (Statistics South Africa, 2011).

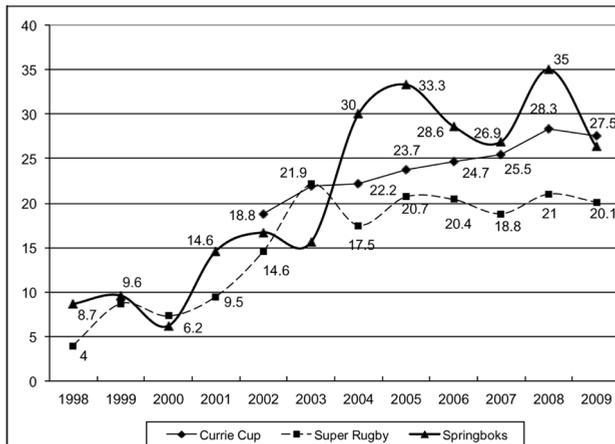
on a par with their white counterparts in the 2003-2009 period (21.3% of players, 21.7% of caps and 21.2% of game time).

Table 2  
*Players (at least one match), caps and game time, by racial group, 1998-2009, %*

	Players			Caps			Game time		
	<i>Test Rugby</i>	<i>Super Rugby</i>	<i>Currie Cup</i>	<i>Test Rugby</i>	<i>Super Rugby</i>	<i>Currie Cup</i>	<i>Test Rugby</i>	<i>Super Rugby</i>	<i>Currie Cup</i>
	1998-2002			1998-2002			1998-2002		
Whites	85.7	91.9	n/a	90.6	93	n/a	89.6	n/a	n/a
Blacks	14.3	8.1	n/a	9.4	7	n/a	10.4	n/a	n/a
	2003-2009			2003-2009			2003-2009		
Whites	77.4	79.5	75.1	78.6	81.3	77.5	78.8	80.5	77.2
Blacks	22.6	20.5	24.9	21.4	18.7	22.5	21.2	19.5	22.8

Figure 2 reveals that in nine years out of twelve (1998-2009), the national team had the highest proportion of non-whites, reaching an historic 35.7% in 2008, but that it was also the most prone to “peaks and valleys” with two notable troughs in 2003 and 2007, both Rugby World Cup years. By contrast, black participation in the Currie Cup grew constantly, up to 28% in 2008. Super Rugby sides have stabilized black presence at around 20% after the steep 50% increase of 2003 (to 21.5%, up from 14.6% in 2002). Yet, positional breakdown reveals considerable contrasts. As the amount of black players became significant in the mid-2000 only, we chose to study more specifically the 2003-2009 period.

Figure 2: Blacks in first class rugby, 1998-2009, proportion of all players



### *Positional assignments*

If centrality is indeed related to racial affiliation, black participation should be in inverse proportion to the centrality scores computed in Table 1. Mean scores were added to Table 3 as a comparison mark, a clear excess of that score being a clue to stacking at a given position. In addition to sheer numbers, comparisons of the respective shares of squads, matches played and game time, provide insight into the race logic of player selection.

Table 3  
Proportion of black South African rugby union professional players, caps and game time by position in Currie Cup, Super Rugby and Springbok teams, 2003-2009

		Forwards					Backs					
		Prop	Hooker	Lock	Flanker	No. 8	Scrum-half	Fly-half	Centre	Wing	Fullback	Mean score
Springboks	Players	26.3	30	7.7	23.1	0	20	0	23.8	42.3	33.3	21.3
	Caps	34	12.5	2.3	5.7	0	33.6	0	16.2	69.5	38.8	21.7
	Game time	26.3	2	5.7	4.1	0	28.3	0	15.4	77.3	22.5	21.2
Super Rugby	Players	19.3	7.4	6.1	7.9	0	26.8	2.9	25.3	66.1	40	20.5
	Caps	19.7	4.2	7.9	7.5	0	27.3	2.9	21.9	62.6	39.4	19.7
	Game time	19.6	4.1	4.9	4.8	0	24.5	0.6	21.4	62.7	39.2	19.6
Curry Cup	Players	15.3	5.3	6.1	27.4	17.4	29	17.4	25.6	63	41.9	24.9
	Caps	14.2	4.2	5.9	25.1	17.6	37.7	17.5	23.9	60.9	44	22.5
	Game time	13.3	3	5.5	23.7	16.1	24.3	15.9	22.3	61.3	46.2	22.8
Average (rank)		20.9 (5)	8.1 (7)	5.8 (9)	14.4 (6)	5.7 (10)	27.9 (3)	6.4 (8)	21.8 (4)	62.9 (1)	38.4 (2)	

Eight of the ten positions (hooker, lock, flank, number 8, fly-half, centre, wing, fullback) display clear stacking patterns, either excluding or including one racial group *en masse*, while the other two (prop, scrumhalf) appear to verge, though not that closely, on "fair" racial repartition in comparison with global racial breakdown. However, it appears that no position displays consistent patterns across the three competitions. For example, the smallest variation in figures is 5.6% for locks (blacks obtained 7.9% of Super Rugby caps and 2.3% of Springbok caps), and the largest 35% for wings (blacks represent 42.3% of Springbok players compared with 77.3% of Springbok game time). As already emphasized, each competition has its own logic, but also while the Springboks played between 10 and 12 matches every year, Super Rugby teams played 60 to 70 and Currie Cup

sides over 90. Two or three changes in the Springbok line-up might therefore alter numbers deeply.

In view of the existing stacking research, it seems reasonable to hypothesize that the more central a position is, the more likely it is to be occupied by whites, and the more peripheral it is, the more blacks are likely to be involved. Yet two central positions display above average black participation while three peripheral positions include few blacks. At the central position of fullback, deviations from the mean scores are quite significant, ranging from 1.3%-17.1% with the Springboks to 17%-23.4% in the Currie Cup. Black fullbacks are also less used as the level increases (40% to 46% in the Currie Cup, around 40% in Super Rugby, and 22.5% to 38.8% with the Springboks). Black scrumhalves are closer to average black involvement, but deviations still reach 7% to 12% (Springboks), 5.9% to 7.6% (Super Rugby) and 1.5% to 15.2% (Currie Cup). One figure is marginally lower than the mean score by 1.3% (proportion of blacks among Springboks). However, in all three competitions, black scrumhalves get relatively more caps than their proportion among players, which indicates that they are often relied upon as starters, which is not the case for fullbacks (blacks are less trusted at that position than whites).

The other three central positions (hooker, number 8 and fly-half) are overwhelmingly white, overall black participation being limited to below 9%. Hooker scores between 2% and 7% for most indicators though among the Springboks blacks represent almost of a third of players. This outlier must be relativized by the fact that blacks obtained only 12.5% of caps and 2% of game time because they were backups to the 83-time Springbok captain John Smit, who registered over 40% of all hooker caps in that period. As of 2009, no black man had played number 8 for the Springboks or a Super Rugby franchise, though blacks accounted for one sixth of Currie Cup eighthmen. This pattern is almost identical to what is observable for fly-halves: though a negligible quantity of three fly-halves blacks played Super Rugby – as backups – for a total of 38 games, only whites had played fly-half for the Springboks as of 2009<sup>3</sup>, while in the Currie Cup, nineteen blacks had worn the n° 10 jersey, of whom only four had at least three seasons as regular starters, none with a major union.

The five peripheral positions should reflect above average black involvement, but this is only the case for three of them. The most spectacular result is at wing, the only position where blacks form the racial majority, reaching an astounding 69.5% of caps and 77.3% of game time for the Springboks, though they account

<sup>3</sup> To the notable exception of Errol Tobias, the first ever non-white man to play for the Springboks in 1981, though as centre. Tobias went on to earn six caps, the last four as fly-half in 1984.

for only 42% of all wings. In Super Rugby and Currie Cup, black wings represent 66% and 63% of the sample, but their participation rates are lower. At the other most peripheral position, prop, blacks are also overrepresented compared to the mean scores. Both wing and prop are in keeping with the notion that peripheral posts are more accessible to non-whites, but curiously black props are proportionately more numerous as the level increases (around 13%-15% in the Currie Cup, just under 20% in Super Rugby, above 26% with the Springboks), the only position where this can be observed. Centre is the other peripheral position with above average black involvement, though blacks get fewer caps and game time in comparison with their proportion in all teams and deviations grow in line with the level of competition as was the case for fullbacks. But the peripheral positions of flanker and lock make little room for blacks. Statistically, lock is the most consistent position across all competitions and criteria, but despite its peripheral nature, blacks are virtually excluded from it in all competitions (between 6% and 7.7% of the players). The more contrasted situation of flankers can be compared to those of fly-half and of number 8, with high black participation in the Currie Cup (one quarter of the category) and a small share in Super Rugby (8%). With the Springbok, the situation is similar to hooker: blacks accounted for 23.1% of flankers, but played very little eventually (4% of game time).

Table 4 summarizes the findings of the present research. It reveals that all positions are prone to a degree of stacking: two central positions accommodate blacks largely above average black participation, whites being stacked in the three others, while blacks are stacked in three peripheral positions and whites in the other two.

Table 4  
Positional stacking in South African rugby

		Central positions	Peripheral positions
Black stacking	Heavy ( $\geq 15\%$ deviation from mean score)	Fullback	Wing
	Limited ( $\geq 0\% - 15\% \leq$ deviation from mean score)	Scrumhalf	Prop, centre
White stacking	Heavy ( $\geq 15\%$ deviation from mean score)	Hooker, No.8, fly-half	Lock
	Limited ( $\leq 0\% - 15\% \geq$ deviation from mean score)		Flanker

## Discussion

The following discussion intends to offer some elements of understanding and hypotheses, as well as suggestions to improve and refine the analysis of positional segregation in South African rugby. Three preliminary remarks must be

made. First, the history of race relations impacted sports as much as other aspects of South African society, but rugby and, though to a lesser extent, cricket are the only sports that have given rise to such polemical polarization, as they were utilized as symbols of white power. Secondly, the massive increase in black players of the early 2000s was fuelled by official positive discrimination policies used in the workplace, which were imported into rugby in the form of quotas imposed on Currie Cup teams (originally, the five south-western provinces had to field at least two blacks at any moment, the other nine at least one. Cros, 2009, p. 25) between 2000 and 2005. Super Rugby and test rugby were not submitted to quotas though political pressure incited coaches to select more blacks. Quotas resulted in a considerable increase of black players until 2005 and their interruption was followed by an irregular evolution (Figure 2). Currie Cup teams could be more easily coerced into accepting a degree of racial inclusiveness because they are less of a priority than the Springboks and the Super Rugby franchises, which “have” to perform well in international competitions, the implicit assumption being that blacks necessarily weaken them. Thirdly, the Currie Cup offers more opportunities to non-whites because several provincial teams chose deliberately to open to blacks in marked excess of the 20% threshold. Yet this was the case of a few minor provinces, not of any of the “Big Five” (Western Province, Blue Bulls, Natal Sharks, Cheetahs and Golden Lions) from which Super Rugby and Springbok players are picked, and where the proportion of non-whites rarely exceeded 20%, as they were under pressure from their traditional fan base and commercial partners to stick to the usual practice of employing whites.

Concerning stacking, it appears that the centrality model applies only partially to the South African case. Finding a perfect race logic explaining the positional repartition of players is hindered by the contrasted situations in the different teams and competitions. Six positions reveal patterns broadly consistent with previous centrality research, but four actually contradict it. The first category includes peripheral positions in which blacks are overrepresented, wing, prop and centre, and the central positions of fly-half, number 8 and hooker where whites are massively overrepresented. In these cases, the repartition is linked to the status of racial groups and to the relative centrality of positions in keeping with what can be observed in American football (Eitzen & Sanford, 1975; Hawkins, 2002) and baseball (Johnson & Johnson, 1995; Gonzalez, 2002) for instance: as enhanced in the description of the model, blacks run fast and have good reflexes, so they can play wing and indeed fullback, where speed and reaction, or as Williams (2009) remarked “adventure and spontaneity”, are important assets, and whites control the strategic posts of fly-half, hooker and number 8. This correlation between skin

colour and positioning has been linked to the inferior social and economic status of non-whites in Anglophone societies “with a history of structural inequalities and discrimination against minorities” (Melnick & Thompson 1996, p. 139). The “Anglocentric hypothesis” (Hallinan, 1991) suggests that racial and cultural prejudice influence coaching and selection processes in favour of whites where legislative desegregation has occurred. As a former British colony with a tense racial history, where white domination still runs deep, democratic South Africa shares several features with the USA, the United Kingdom and Australia, where the phenomenon was observed. South African rugby seems to be in the same league as team sports in other English-speaking countries where non-whites are at a disadvantage in sports dominated by white values and ethos, sometimes suffering from downright racist attitudes, because of Western-based stereotyping about black and mixed-race athletes (see for instance Carrington, 2010). Such social Darwinist generalization of human qualities and flaws ascribed permanently to a group blocks out possibilities of change and blacks are kept in roles consonant with their alleged place.

Controversies arise regularly about the racial dimension of selection policies. Black participation with the Springboks dropped significantly in 2003 and 2007, both World Cup years, when national coaches were accused of sticking with “safer” white players for the biggest competition except in easy first-round qualification matches but also of using blacks almost exclusively as wings (in other years, blacks could be tried out with less pressure and at other positions than the “back three”, i.e. wings and fullback). If winning – the outcome – is the only measure to gauge the impact of race, then this policy was proved right in 1995 and 2007 when the Springboks won the trophy despite fielding only one and two black wings as starters, and finished third in 1999 (with one black wing). However, they were eliminated at the quarterfinal stage in 2003 (with one black wing) and 2011 (with two black wings). The “seagull syndrome” – a white team with two black wings (Cros, 2009) – was also the rule in 2007 when the Super Rugby final was contested by two South African teams – the Bulls defeating the Sharks – with only four black starters, all wings (there was an additional black prop on the Sharks bench). Only a year later, there were seven non-whites (four starters, including three wings and fullbacks, and three substitutes) on the Bulls team that crushed the Chiefs of New Zealand 61-17. Yet affirming that the increased number of black players made the Bulls a good team “because they were black” is as highly contentious as stating that the team was good because there were only few blacks when they won the title a year earlier.

However, even combined with the Anglocentric hypothesis, the centrality model cannot account for the fact that blacks are represented above average at the central positions of fullback and scrumhalf while whites enjoy a virtual monopoly at lock and flanker, two peripheral positions. However, these cases reveal the high symbolical as much as concrete premium put on physicality, which in our view must be considered as a factor of centrality in South African rugby. The notion that whites as simply stronger, and therefore better suited for positions where sheer power is needed, is openly justified by “objective” data, like the whites’ average height. Whites are taller than other racial groups in the country, entertaining the idea that only whites can be recruited as forwards<sup>4</sup>. Lock is almost exclusively white because it is “one position you have to be built for the job” [sic] (Williams, 2009). Blacks are less used at centre than at fullback and wing because though they are peripheral three-quarters, centres are expected to display physicality (their missions include barging through the defence and tackling ferociously). Since 2000, the smallest Springbok centres have all been black. At flanker, another position where physicality is essential, the necessary body types are more readily available across racial groups, and indeed there is a relatively high proportion of black flanks in the Currie Cup, but there seems to be a glass ceiling that blocks their progress into Super Rugby and test rugby. This is probably because of the dominant racial model of what a South African flanker must be, essentially a fierce solid tackler, who is more likely to be white than black. Rule changes in the 2000s, notably the increased leeway offered to defenders at the breakdown, have enhanced his importance as a “fetcher” and confer him a more central role than the model might show, because the considerable area that needs to be covered and the expected fitness to do it are essential to fetch the ball.

Physicality, or lack thereof, may conversely explain why many blacks play at the central positions of fullback and scrumhalf, which do not request these attributes in the same proportion as forwards for instance. Scrumhalf is a position traditionally occupied by the team’s smallest player, while fullback, the “least central” of the central positions, involves running the ball upfield, which is best done not by using strength, but speed, agility, inventiveness or “creativity”, qualities also associated to wings, a position many non-white fullbacks occupy regularly. Why then is prop, the position where weight and power are necessary

<sup>4</sup> Professor Mike Lambert, Medical Research Council/University of Cape Town Research Unit for Exercise Science and Sports Medicine (Sports Science Institute of South Africa). Personal interview, March 1, 2010. Although whites are a small minority, they account for a big proportion of the tallest men, among whom top athletes are generally picked. The mean stature of South African army male soldiers between 2000 and 2005 was 171 cm for blacks, 170.3 cm for coloureds, and 178.4 cm for whites (Steyn and Smith, 2008).

conditions to top level success, relatively open to blacks when it should be a fully white domain? This can be attributed to the availability of two exceptional non-white players, Tendai Mtawarira and Gürthro Steenkamp, each capped over thirty times by the Springboks, who influence statistics considerably, to the fact that it is possible to find readily such body types among blacks, and to the peripheral nature of the position. This suggests that individual cases or exceptions cannot be discarded.

Physicality is fundamental to rugby in general, but in South Africa, it has been vaunted as a component of the identity of Afrikaner rugby. Rugby's need for "big bodies" is unashamedly related to Afrikaner genes, an argument best embodied in a declaration by Nick Mallett, a former Springbok coach – though not an Afrikaner himself –, who explained that South Africa won the 2007 World Cup because of a form of natural, genetic, selection that allows the survival of the fittest players and ultimately yields super-humans designed for rugby in the South African habitat.

Rugby is a sport where big, strong and fast people excel and if you don't start off with those attributes you are just going to struggle... I don't know why it is, but *it is a fact* that the Afrikaner cultural group just seems to produce some *freakishly built people with a freakish genetic make-up*... It is not racist that these players play ahead of black players, just as it is not racist that players with Pacific Island backgrounds are starting to dominate backlines in New Zealand (where) a lot of the so-called white players are giving up rugby on the basis that they are tired of being smashed by the big islanders. *It is all about genetics* (Quoted in Rich, 2007. Emphases mine.)

## Conclusion

The dynamic transformation of South African elite rugby from white-dominated to mixed-race has been chaotic and limited. It is always complicated to prove intentional discrimination but sheer numbers indicate that positional imbalance according to race exist with six of the ten positions displaying heavy stacking patterns, while the other four deviate significantly from the mean scores in one or several competitions. More than one perfect global explanation, we believe that a variety of factors are at play, some having been previously observed in other parts of the world, especially in North America. Our findings are partly consistent with previous research on theoretical centrality in sports, as the model we defined provided an appropriate framework for four positions. The "outcome control hypothesis" (Eitzen & Sanford, 1975; Johnson & Johnson, 1995) was con-

firmed by the fact that central positions with a direct impact on results, such as hooker and fly-half, are overwhelmingly white. The Anglocentric hypothesis, intimately linked to the pattern of black athleticism and innate talent *vs.* white intelligence, was also partially sustained by numbers. However, none of these explanations provided a perfect interpretation grid for the central positions of scrumhalf and fullback, which record large black participation, and the peripheral positions of lock and flanker, which are almost entirely white. This led us to hypothesize that the significance of the Afrikaner worldview in South African rugby, in particular the centrality, both concrete and symbolic, of physicality as a key selection criterion, could provide compelling explanations to these cases of 'reverse stacking'.

Given the clear racial disproportion, it is hard not to consider that selection processes are related to the perceptions of individuals as belonging to certain racial groups – the relation of these groups to physicality being one essential aspect – not just to their individual talent, and to the status of these groups in society and in the rugby environment. Thus the coloured community's intermediary and ambiguous status in South African society (they are sometimes called "brown Afrikaners" and speak Afrikaans, a key skill in South African rugby) has been studied academically (for a review of the literature on this subject, see Adhikari, 2005), including in rugby (Nauright and Magdalinski, 2002). More in-depth research is needed about the opposition between black Africans and coloureds, as coloureds outnumber blacks by 2 to 1 among rugby professionals although they account for less than 10% of the general population. Ultimately we believe that sociological explanations specific to the host societies need to be accounted for to understand the complex stacking mechanisms. Rugby union is played in many different countries, most being English-speaking, and international comparisons would help to refine the Anglocentric hypothesis.

All this can only be confirmed through qualitative research into selection mechanisms and processes, which were only grazed upon in the present paper. In particular, it is necessary to look into how young players are groomed by studying the role of school rugby, which serves as the breeding ground of future professionals as most international and Super Rugby players, regardless of skin colour, were educated at one of the big traditional predominantly white "rugby schools". The rise of coloured and black staff in professional clubs needs to be assessed too, not just numerically but also in comparison with the racial and positional composition of teams to determine if an increased presence of black coaches translates into higher proportions of black players. Desegregation being very much a process that has just begun in South Africa, black involvement will

need monitoring at regular intervals, though the fact that small numbers were used made us relativize some unexpected results as the inclusion or exclusion of a handful of individuals may alter statistics by several percentage points particularly at test level.

### References

- Adhikari, M. (2005). *Not white enough, not black enough: Racial identity in the South African coloured community*. Athens (OH): Ohio University Press.
- Anderson, B. (1991). *Imagined communities – Reflections on the origin and spread of nationalism*. London: Verso (first published in 1983).
- BBC. (n.d.). *Rugby union positions guide*. In [http://news.bbc.co.uk/sport2/hi/rugby\\_union/rules\\_and\\_equipment/6332057.stm](http://news.bbc.co.uk/sport2/hi/rugby_union/rules_and_equipment/6332057.stm) (accessed December 1, 2010).
- Best, C. (1987). Experience and career length in professional football: The effect of positional segregation. *Sociology of Sport Journal*, 4 (4), 410-20.
- Blalock, H. (1962). Occupational discrimination: Some theoretical propositions. *Social Problems*, 9 (Spring), pp. 240-47.
- Carlin, J. (2008). *Playing the enemy: Nelson Mandela and the game that made a nation*. New York: The Penguin Press.
- Carrington, B. (2010). *Race, sport and politics. The sporting black diaspora*. London/Thousand Oaks: Sage.
- Coakley, J. (1998). *Sport in society: Issues and controversies* (6<sup>th</sup> ed.). New York: McGraw-Hill.
- Craven, D. (1977). *Rugby handbook*. East Hardsley: EP Publishing (first published in 1970 by Tafelberg, Cape Town).
- Cros, B. (2009). Le springbok et la mouette : Rugby, race et transformation en Afrique du Sud. In Perrot, C., Prum, M. & Vircoulon, T. (Eds.), *L’Afrique du Sud à l’heure de Jacob Zuma* (pp. 19-42). Paris: L’Harmattan.
- Curtis, J., & Loy, J. (1978). Positional segregation in professional baseball: Replications, trend data and critical observation. *International Review of Sport Sociology*, 4 (13), 5-21.
- Edwards, H. (1973). *Sociology of sport*. Homewood, IL: Dorsey Press.
- Eitzen, D. S., & Sanford, D. C. (1975). The segregation of blacks by playing position in football: Accident or design? *Social Science Quarterly*, 55, pp. 948-959.
- González, L. (2002). The stacking of Latinos in Major League Baseball: Does it matter if a player is drafted? *Journal of Hispanic Higher Education*, 1 (4), 320-328.
- Grusky, O. (1963). The effect of formal structure on managerial recruitment: A study of baseball organization. *Sociometry*, 26 (3), 345-353.
- Hallinan, C. J. (1991). Aborigines and positional segregation in Australian Rugby League. *International Review for the Sociology of Sport*, 26 (2), 69-79.
- Hawkins, B. J. (2002). Is stacking dead? A case study of the stacking hypothesis at a South-eastern Conference (SEC) football program. *International Sports Journal*, 6 (2) (Summer), 146-159.
- International Rugby Board. (2008). *A Beginner’s Guide to Rugby Union*. In [http://www.irb.com/mm/document/training/0/beginners20guide20en\\_7391.pdf](http://www.irb.com/mm/document/training/0/beginners20guide20en_7391.pdf) (accessed January 13, 2011).

- Itsrugby.uk (n.d.). *Players' profiles*. In <http://www.itsrugby.co.uk> (last accessed April 29, 2012).
- Johnson, B. D., & Johnson, N. R. (1995). Stacking and "stoppers": A test of the outcome control hypothesis. *Sociology of Sport Journal*, 12 (1), 105-12.
- Jones, G., Leonard, W., Schmitt, R., Smith, D. R., & Tolone, W. (1987). Racial discrimination in college football. *Social Science Quarterly*, 68 (1), 70-83.
- L'Express*. (2007, August 9 and 16). XV postes par XV joueurs.
- Lavoie, M., & Leonard, W. M. (1994). In search of an alternative explanation of stacking in baseball: The uncertainty hypothesis. *Sociology of Sport Journal*, 11 (2), 140-154.
- Leonard, W. M. (1977). Stacking and performance differentials of whites, blacks and Latinos in professional baseball. *Review of Sport and Leisure*, 2, pp. 77-106.
- Leonard, W. M. (1987). Stacking in college basketball: A neglected analysis. *Sociology of Sport Journal*, 4 (4), 403-409.
- Long, J., & Spracken, K. (1996). Positional play: Racial stereotyping in Rugby League. *Bulletin of Physical Education*, 32, pp. 18-22.
- Loy, J. W., & McElvogue, J. F. (1970). Racial segregation in American sport. *International Review for the Sociology of Sport*, 5, pp. 5-24.
- Maguire, J. (1988). Race and position assignment in English soccer: A preliminary analysis of ethnicity and sport in Britain. *Sociology of Sport Journal*, 5 (3), 257-269.
- Maguire, J. (1991). Sport, racism and British society: A sociological study of England's elite male Afro/Caribbean soccer and rugby union players. In Jarvie, G. (Ed.). *Sport, racism and ethnicity* (pp. 94-123). London: Falmer Press.
- Medoff, M. (2004). Revisiting the economic hypothesis and positional segregation. *The Review of Black Political Economy*, 32 (1), 83-95.
- Melnick, M. (1988). Racial segregation by playing position in the English football league: Some preliminary observations. *Journal of Sport and Social Issues*, 12 (2), 122-130.
- Melnick, M., & Thompson, R. (1996). The Maori people and positional segregation in New Zealand rugby football: A test of the Anglocentric hypothesis. *International Review for the Sociology of Sports*, 31 (2), 139-154.
- Nauright, J., & Magdalinski, T. (2002). Religion, race and rugby in "coloured" Cape Town. In Magdalinski, T., & Chandler, T. (Eds.), *With God on their side: Sport in the service of religion* (pp. 120-138). New York: Routledge.
- Nicholas, C. W. (1997). Anthropometric and physiological characteristics of rugby union football players. *Journal of Sports Medicine and Physical Fitness*, 23 (6), 375-396.
- Norris, J., & Jones, R. (1998). Towards a clearer definition and application of the centrality hypothesis in English professional association football. *Journal of Sport Behavior*, 21, pp. 181-196.
- Reilly, T. (1997). The physiology of rugby union football. *Biology of Sport*, 14 (2), 83-101.
- Rich, G. (2007). Afrikaners dominate rugby due to genetics. *Pretoria News*, 10 November. In <http://www.iol.co.za/sport/afrikaners-dominate-rugby-due-to-genetics-1.580953> (accessed November 21, 2010).
- Rugby Football Union. (n.d.). *Positional skills guide*. In [http://www.rfu.com/TakingPart/Choose\\_Play/Skills/Positional.aspx](http://www.rfu.com/TakingPart/Choose_Play/Skills/Positional.aspx) (accessed May 12, 2011).
- Rugby Football Union. (n.d.). *Positions guide*. In <http://www.rfu.com/TheGame/PositionsGuide.aspx> (accessed May 12, 2011).

- SARU. (2011). *Origins of the game*. In <http://www.sarugby.net/content.aspx?contentid=7534&statsteam=South%20Africa&statscatid=2,9> (accessed January 17, 2011).
- Smith, E. (2000). Stacking in the team sport of intercollegiate baseball. In Brooks, D., & Althouse, R. (Eds.), *Racism in college athletics: The African American athlete's experience* (pp. 65-84). Morgantown, WV: Fitness Information Technology.
- Statistics South Africa. (2011). *Mid-year estimates. Report, 27 June. Statistical Release, P0302*. In <http://www.statssa.gov.za/publications/P0302/P03022011.pdf> (accessed September 4, 2011).
- Steyn, M., & Smith, J. (2008). Interpretation of ante-mortem stature in South Africans. *Forensic Science International*, 171 (2), 97-102.
- Wakefield, W., & Marshall, H. (1927). *Rugger*. London: Longmans, Green & Co.
- White, J. (2011, October 8). RWC: Jake White's take on the quarter finals. In <http://www.rugby-talk.com/2011/10/rwc-jake-whites-take-on-the-quarter-finals> (accessed November 12, 2011).
- Williams, R. (2009). Position specific. In <http://rossrugby.co.za/players-info/position-specific/> (accessed April 2, 2011).