Contextualised Skill Acquisition: Investigating the Skill and Expertise of Brazilian Footballers

Luiz Uehara

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ABSTRACT

This thesis investigates the role of socio-cultural-historical environmental constraints influencing the development of association football expertise and skill in Brazilian players. Only a small number of studies in the field of motor learning have attempted to address this issue due to the qualitative, interpretive research approach required to analyse socio-cultural themes. However, considering that expertise in sports emerges from the complex interaction of multiple constraints, socio-cultural factors have to be further explored in a contextualised manner so that knowledge in the field of motor learning can be advanced. This thesis presents an interpretive, multi-methods approach to holistically investigate the interacting constraints on the development pathway of Brazilian football players.

In contrast to traditional positivist approaches, this thesis is based on the philosophical assumptions of the interpretive research paradigm and the epistemological and methodological tenets of Bronfenbrenner's Bioecological Model of Human Development. In addition, to guide and generate data, this programme of work adopts ethnographic strategies of inquiry and related methods, including: contextual analysis, participant-observation, and open-ended interviews. Drawing upon the multi-methodological approach, this thesis proposes *contextualised skill acquisition research* (CSAR) as a suitable methodological framework to investigate skill acquisition in sport. Using this new approach, key findings show that the development of expertise in Brazilian footballers is a function of informal, even aversive variables ranging from the microsystemic level under the context of *pelada*, mesosystemic level under the context of *home* and *federated clubs*, exosystemic level under the context of *poverty* and macrosystemic level under the context of s*amba*, *capoeira*, and *malandragem*.

The objective of this thesis is to promote methodological possibilities to investigate effects of socio-cultural constraints on expertise acquisition in sport. As such the thesis offers

new theoretical and epistemological insights to the development of the proposed contextualised skill acquisition research framework. In doing so it seeks to build bridges across the methodological boundaries between sociology and motor learning in the first instance, rather than offering a unifying approach for the whole field.

DEDICATION

In Loving Memory of

Terushigue Uehara
For being my first teacher
Thank you father

Eliane Uehara
For being so proud of your young brother
Thank you sister

Marcelo Rosa
For the laughter and friendship
Thank you brother

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TABLE OF CONTENTS

ABSTRACT....ii

DEDICATION....iv

ACKNOWLEDGMENTS....v

TABLE OF CONTENTS....viii

LIST OF TABLES....xiii

LIST OF FIGURES....xiv

LIST OF SECTION COVER IMAGES....xvi

PUBLICATIONS RELATING TO THIS THESIS....xviii

PREFACE....xix

PROLOGUE....xxiii

Autobiography....xxiii

CHAPTER 1....1

Introduction....1

1.1 On Ginga: The Perceptual-Motor Skills of Brazilian Football Players....2

1.2 Research Question: On Perceptual-Motor Skills and Expertise....8

1.3 Significance of the Study....11

CHAPTER 2....14

Theoretical Grounding....14

2.1 Skill Acquisition: A Constraints-Led Approach....15

2.2 Ecological Psychology....17

2.3 Dynamical Systems Theory....19

2.3.1 Self-Organisation....20

2.3.2 Constraints....21

2.4 Newell's (1985) Three-Stage Model of Learning 24
2.5 This Thesis: Sport Expertise 25
2.6 Summary 28
CHAPTER 3 29
Contextualised Skill Acquisition Research: A New Framework to Study the Development of Sport Expertise 29
3.1 Introduction 30
3.2 Philosophical Foundations of Contextualised Skill Acquisition Research 33
3.2.1 Positivist, Quantitative Paradigms 34
3.2.2 Interpretive, Qualitative Paradigms 35
3.2.3 Qualitative or Quantitative Choosing Dimensions 36
3.3 Theoretical Foundations of Contextualised Skill Acquisition Research 37
3.3.1 Bioecological Model of Human Development 39
3.4 Methodological Foundations of Contextualised Skill Acquisition Research 43
3.4.1 Researcher as a Tool and as a Bricoleur 44
3.4.2 Ethnographic Strategy of Inquiry 46
3.4.3 Contextual Analysis 47
3.4.4 Participant Observation 47
3.4.5 Open-Ended Unstructured Interview 48
3.5 Evaluation in the Form of the Coherence Theory of Truth 49
3.6 Discussion and Conclusions 53
CHAPTER 4 55
A Contextualized History of Brazilian Football: The Road Toward Ginga 55
4.1 Introduction 56

4.2 The Genesis of Brazil 58
4.3 The Rise of Football in Brazil 64
4.4 Football as Popular Culture 68
4.5 Football, Politics and the Rise of the Champions 73
4.6 Final Remarks 78
4.7 Summary 81
CHAPTER 5 82
The Role of Apparently Aversive Socio-Cultural Constraints on the Development of Brazilian Footballers 82
5.1 Introduction 83
5.2 Procedures 84
5.3 Participants 85
5.4 Field Work: Description and Illustration of the Settings 87
5.4.1 São Paulo State 87
5.4.2 Jundiaí 88
5.4.3 Paulista Football Club 89
5.4.4 São Paulo Football Club: President Laudo Natel Athlete Formation Center 90
5.4.5 Favela Vila Ana 91
5.5 Analytical Procedures 92
5.6 Results and Analysis 94
5.6.1 Microsystem under the Context of Pelada 94
5.6.2 Mesosystem under the Context of Home and Federated Clubs 104
5.6.3 Exosystem under the Context of Poverty 110
5.7 Summary 119

CHAPTER 6 121

The Role of Macrosystem Socio-Cultural Constraints on the Development of Brazilian Footballers 121

6.1 Introduction 122

6.2 Results and Analysis 125

6.2.1 Samba 125

6.2.2 Capoeira 126

6.2.3 Samba, Capoeira, and Football: Interactive Dimensions 128

6.2.4 Malandragem 136

6.2.5 Malandragem and Football: Interactive Dimensions 139

6.3 Summary 143

CHAPTER 7 146

Epilogue 146

7.1 Introduction 147

7.2 Key Findings of this Research Programme 148

7.2.1 Applications of the Bioecological Model to Research in Skill Acquisition 149

7.2.2 Does ‘the Brazilian Way’ (Ginga) Still Exist or is it a Myth? 151

7.2.3 Ginga is not Universal to all Brazilian Footballers 152

7.2.4 The Development of the Contextualised Skill Acquisition Research Framework 152

7.2.5 Theoretical Implications of this Research via the Constraints-Led Approach 153

7.2.6 Contribution to Brazilian Football Organisations 156

7.3 Limitations of this Thesis 157

7.3.1 Application of Bronfenbrenner’s Bioecological Model 157

7.3.2 Difficulty in Extracting Concise Information from Participants 158

7.3.4 Time and Funding – Reaching a Point of Saturation 159

7.3.5 Speculation on the Implications of these Limitations 159

7.4 Suggestions for Future Research 160

7.5 Conclusions 163

REFERENCES 165

APPENDIX 190

LIST OF TABLES

Table 1. The philosophical, theoretical and methodological basis of contextualised skill acquisition research. N.B.: for explanatory purposes it is necessary to describe constructs and concepts as independent, however several concepts and ideas in the table are closely linked. Rather than attempting to capture such complex and important relationships through a simplified figure I recommend consulting the suggested sources of evidence and background reading for further clarification. 32

Table 2. Examples of inclusion criteria to be cross-referenced against information generated in interpretive research (Denzin, 1989, p. 81). 52

Table 3. Short description of participants (interviewees) organised by first names in alphabetic order. Interviews were conducted in informal, public areas such as cafés, football clubs and in my homestay. 86

Table 4. Quotes from the interviewees* highlighting their experience on playing in a natural learning environment (my translation). *These interviewees have been directly involved with professional football 95

Table 5. The influence of pelada on the development of football expertise described by former high profile Brazilian football players. (Adapted from Araújo et al., 2010). 98

Table 6. Quotes from interviewees highlighting their experience on playing pelada. 99

LIST OF FIGURES

The Figures have been acknowledged according to their respective sources and copyrights. Any Figures without acknowledgement means that they are either of my own authorship or have been extracted from the search engine Google, which is in public domain.

Figure 1. The Constraints-Led Model showing how perceptual-motor skills (in the form of functional information-movement coupling) emerge from the interaction of key constraints on the performer (Adapted from the ideas of Newell, 1986).....9

Figure 2. Illustration of Bronfenbrenner's bioecological model. N.B.: In relation to the context, only microsystems are physically located. The others are "events or forces" that influence the person and the particular microsystem under analysis. The mesosystem encompass other microsystems frequented by the person. The exosystem comprises the microsystems that indirectly influence the person and the microsystem under analysis. The macrosystem embraces the overarching patterns of the micro-, meso, and exosytems contexts of a given culture. Further than the person and the context, the bioecological model comprises time and process. Process expresses the characteristics of person-context interactions over time. Additionally, person and context change over time (Based on ideas of Araújo et al., 2010). 39

Figure 3. Map of the State of São Paulo, Brazil, including my home town Jundiaí.....88

Figure 4. A panoramic view of downtown Jundiaí, São Paulo, Brazil.....89

Figure 5. Panoramic view of Jaime Cintra Stadium, Jundiaí, São Paulo, Brazil.....90

Figure 6. A panoramic view of the São Paulo F.C. Cotia Youth Training Centre. 91

Figure 7. Youth from favela Vila Ana, Jundiaí, São Paulo, Brazil.....92

Figure 8. Vila Ana futsal court, Jundiaí, São Paulo, Brazil. 100

Figure 9. Mangueira samba school parade in the 1998 Carnival in Rio de Janeiro. 126

Figure 10. A group practicing capoeira at Salvador beach in Bahia, Brazil.....128

Figure 11. The man in the picture represents a typical malandro on the street. 145

LIST OF SECTION COVER IMAGES

The Images have been acknowledged according to their respective sources and copyrights. Any Images without acknowledgement means that they are either of my own authorship or have been extracted from the search engine Google, which is in public domain.

Image 1. Pelé using his ginga skills to perform an overhead kick in a match between Brazil and Belgium in Rio de Janeiro, Brazil, 1965. As a cover image, I deliberately chose the photograph of Pelé, the ultimate symbol of Brazilian football, to represent the beginning of this thesis.....xix

Image 2. Luiz and colleagues performing ginga dribbling skills at the University of Otago, Dunedin, New Zealand, 2014. As a cover image of this chapter, this photograph was chosen to represent the notion of autobiography. xxiii

Image 3. Garrincha using his ginga dribbling skills in the 1958 FIFA World Cup Sweden. This image was chosen as a cover for this chapter because Garrincha best represents the notion of the Brazilian way of playing, the ginga style. 1

Image 4. The professional team of Paulista Futebol Clube training under the command of coach Vagner Lopes, Jundiaí, Brazil, 2011. As a cover image, this photograph represents the notion of the constraints-led approach with the small-sided game being manipulated as the task constraints (see video clip “Paulista FC SSG” in the DVD attached in the Appendix section).....14

Image 5. Two senior amateur teams saying the prayers “Ave Maria” and “Our Father” before a social friendly match game, Jundiaí, Brazil, 2011. Such action is a common behaviour

amongst Brazilians due to the influence of the Catholic Church. Hence, as a cover image, this photograph was chosen to represent the notion of contextualism, which is the core concept of this chapter. 29

Image 6. The Brazilian national team that played in the 1938 FIFA World Cup France. As a cover image, this photograph was chosen because the team was the first Brazilian squad recognised internationally for its ginga style of playing. 55

Image 7. Children playing football in the outskirts of São Paulo city. As a cover image, this photograph was chosen to represent variables such as “pelada” and “poverty”, the two of many variables that have been discussed in this chapter as constraints that influence the development of Brazilian football style. 82

Image 8. Some of the members of the Brazilian national team celebrating with dance a goal scored by Neymar in a friendly match against the USA football national team in USA, 2012. As a cover image, this photograph represents the core of this chapter which regards the influence of dance on the development of skills of Brazilian football players. 121

Image 9. As a cover for this chapter, I have intended this image to symbolise the ultimate glory in football which is scoring goals and in turn symbolise the ultimate glory of coming to the end of this thesis. 146

PUBLICATIONS RELATING TO THIS THESIS

Journal Article

Uehara, L., Button, C., Falcous, M., & Davids, K. (2014). Contextualised skill acquisition research: A new framework to study the development of sport expertise. *Physical Education & Sport Pedagogy*. doi: 10.1080/17408989.2014.924495.

Media Broadcastings

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Uehara, L. (2014). Dance key to footing it at the top. Interviewed by Vaughan Elder from the Otago Daily Times, June 27, 2014. Dunedin, Otago, New Zealand (see (http://www.odt.co.nz/campus/university-otago/307281/dance-key-footing-it-top).

Uehara, L. (2014). The Brazil Question – Luiz Uehara. Interviewed by Simon Mercep from the Radio New Zealand National, June 27, 2014. Auckland, New Zealand (see http://www.radionz.co.nz/national/programmes/afternoons/audio/2601328/the-brazil-question-luiz-uehara).

Uehara, L. (2014). Football, Samba, and Capoeira in Brazilian Football. Interviewed by Megan Martin and transmitted on TVNZ Seven Sharp Programme, July 7, 2014. New Zealand (see video clip "Seven Sharp Programme" in the DVD attached in the Appendix section).

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PREFACE

My inspiration and aspirations for this PhD study programme emerged from the exciting idea of studying one of my passions, '*Brazilian football style*'. However, a question that has to be addressed is: does this famous Brazilian style really exist or is it only a myth that was created by journalists and writers around a particularly memorable era of Brazilian football teams or individual players? In short, based on the assumptions of the *interpretive paradigm* in which reality of truth is undergirded by social agreement (see further details in Chapter 3), it can be said that the Brazilians have acquired and retained a special style of playing football. In other words, there is a general consensus about the identification of Brazilian football style, confirmed by significant national and international historical accounts.

Having said that, it is important to acknowledge that in the last few decades Brazilian football has been in decline both in terms of results as well as performing *á la* Brazil. For instance, while the Brazil national team, also known as *seleção*, won the Fifa World Cup in 1994, that 'selecão' was heavily criticised for playing without the essence of Brazilian style (see Rocha & Costa, 2014; Stycer, 2014). In 2002, Brazil won again and despite the team being only a shadow compared to what the *seleção* used to be, some players namely Ronaldo, Rivaldo, Ronaldinho and Roberto Carlos provided some of the skills associated with Brazilian football style. Since then, things got worse for the *seleção* as was apparent in the most recent Fifa World Cup 2014. Despite the fluctuations and to save Brazil from criticism, there will be always someone on an individual level who can represent the country and its style of playing football. In the most recent World Cup held in Brazil the perceived saviour was Neymar, the new icon who is bringing back ginga style, the Brazilian way of playing.

It is important to note that, my choice of this sport as a research vehicle is not a matter of cultural favouritism. The rationale for choosing football was based on my coaching experience, my academic background, and ultimately to the aim, objective and purpose of this study. As such, this thesis drew upon theoretical perspectives from the constraints-led

approach to ground the methodological approach which investigated socio-cultural influences on the development of football expertise by Brazilian football players (see Chapter 3 for further details). Under this scenario, this thesis differs from typical motor learning research in many different ways, starting from the uncommon inclusion of a *preface* and a *prologue* sections. More than that, however, is the atypical multi-methodological approach, and relatedly the linguistic style used throughout the thesis. Significantly, from a philosophical perspective, I deemed it necessary to use the interpretive paradigm in this research rather than the positivist paradigm which has historically underpinned research in this field of study. Therefore, the intent of this preface is to briefly explain the rationale for such differences so that readers can be informed and prepared in advance for the contrasts. Furthermore, I will take the opportunity to summarise the scope of this research programme.

To begin with, one of the key characteristics of qualitative research concerns the inquirer being the main instrument of the inquiry (see Denzin & Lincoln, 2005). As such, by being the main instrument of this qualitative research accords with the use the first person pronoun so that readers can appreciate the strong link between the research topic and the researcher. Moreover, under the umbrella of qualitative research, the researcher's personal background needs to be considered and addressed so "the audience can better understand the topic, the setting, or the participants and the researcher's interpretation of the phenomenon" (Creswell, 2009, p. 177). With this in mind, I begin this thesis with a short autobiography, as highlighted in the prologue section below.

Inarguably, anecdotes and personal statements do not suffice when investigating such issues from a social science point of view. Therefore, throughout this thesis, I have provided historical accounts, analysis, and interpretations in an attempt to interrogate the socio-cultural attributes that inform the style and consequently, the football expertise of Brazilian football players. As readers work through this thesis, it will be clear that when I write about Brazilian

football style, I am in fact writing about "ginga" and, in turn, I am referring to the perceptual-motor expertise of Brazilian football player. Thus, "style", "ginga" and "perceptual- motor expertise" are almost synonymous within the context of this PhD research.

In Chapter 1, I outline background information on ginga, the Brazilian football style. This informs the research problem and significance of the study. In Chapter 2, I review the literature relevant to this research. This encompasses the constraints-led approach, ecological psychology, dynamic systems theory, Newell's (1985) three-stage model of learning, and expertise in skill acquisition. In Chapter 3, I discuss one of the most important subjects of this research project, that is, an in-depth explanation of the philosophical and methodological assumptions of the qualitative research approach (the core of Chapter 3 has been published; see Uehara, Button, Falcous, & Davids, 2014). Subsequently, Chapter 4 provides a contextualised history of Brazilian football which was useful to inform the ethnographic field work in Brazil. Chapter 5 presents data exploring the role of micro-, meso-, and exo-systems of Bronfenbrenner's bioecological model on the development of football expertise of Brazilian players. Chapter 6 is a continuation of the analysis of socio-cultural constraints on the development of perception-motor skills of Brazilian players but viewed under the parameters of the macrosystem of the Bronfenbrenner's bioecological model of human development. Finally, in Chapter 7, I conclude with a summary and overall discussion of findings and future recommendations.

PROLOGUE

Autobiography

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I was born and raised in Brazil. I grew up in Jundiaí, a city of about 350.000 people, located 60 km from the metropolis of São Paulo. Jundiaí is mostly famous for its annual grape and Italian food festivals; events that reflect the great number of Italian descendants in the region. Like many Brazilians, I have a multi-ethnic background with a mixture of European from my mother's side and Japanese from my father's side. Also, as for many other Brazilian children, my passion and dream was, and to a certain extent still is, all about association football (soccer).

I have early memories of playing a lot of street soccer when I was around the age of five. Perhaps at that stage, I was already, unconsciously, deeply affected by the *fever* of football; a fever that historically has influenced millions of Brazilians. My dream to become a professional football player was intensified when, at the age of nine, I moved with my family to a newly formed suburb called *Vila Marlene*. Situated on the outskirts of the city, this village was isolated and surrounded by nature. Amongst many needs, school, sewage systems, and asphalted roads were priorities in this community. Such shoddiness made the place affordable for the lower working class people who were looking for the opportunity to buy their first piece of land. My father managed to buy a 250 m^2 section where he built a small house with a kitchen, a bathroom, and a room for eight of us (my parents, two sisters, three brothers, and myself; amongst the siblings, I am number five).

Looking back, however, I can see that it was exactly the lack of structure and infrastructure that, combined with the natural surroundings, made Vila Marlene ideal for discovery learning and the acquisition of perception-motor skills, especially for someone like me who was hyperactive. I was highly engaged in all sorts of physical activities and unstructured play such as swimming in the lakes and rivers, climbing trees, cops and robbers, hide and seek, French cricket, go-carting (soap box cart), kite flying, slingshot hunting,

fishing, spinning top, marbles, dancing, and of course, football. Like my peers[1], we were all self-learners. Fishing gears and toys like kites, soap box carts, and slingshots were all homemade.

Implicitly or explicitly, it was all about competing against each other. Indeed, there was no such thing as playing only for fun. The prize was pride and earning respect. Even for simple activities like kite flying, the idea was to cut other kites in the air. To do so, there were many techniques used to manoeuvre the kite sideways, back-forth and up-down. Besides the skills, a very refined ground glass glued on the kite line was essential for a good battle[2]. When a kite was cut, groups of children from different parts of the village would run through streets, houses, and bushes to be "the one" to catch the kite.

However, football was my favourite activity. Almost every day I met my peers to play, either on the street or on a makeshift field in an empty lot. Usually the unfortunate less skilful kid had to play goalkeeper, except if he was the owner of the ball! We had an official team that represented our community. I remember that for some of the tournaments away, we had a *pau de arara* (flatbed truck) to take us to games. If we could not afford it, or when no form of transportation was available, we had to walk, sometimes over 15 kilometres. All for the love of the game and the pursuit of our dreams! No matter what, our motivation was always high, especially because we knew that the majority of our football heroes had to go through similar or even harder conditions.

Thinking back, I am reminded how football was a paradox in my life. For instance, at that stage it was rare to see Japanese descendants playing football competitively. I was one of the exceptions. Like many other Brazilians my family watched football in big events like

[1] Some of the friends of that group were Carlinhos (Carlos), Juninho (Junior), Paulinho (Paulo), Joãzinho (João), Luizão (Luiz), Marcão (Marcos). In Brazil it is common to use the suffix "inho" to mean *little*, and "ão" to mean *big*.

[2] Today, due to safety hazard reasons it is illegal to play kiting with refined glass glued on the line.

World Cups and my brothers played pickup games on the streets, but none of them ever played for a club. I remember playing only once with my father, but that's all. In fact, my parents never came to watch me playing for any of the teams that I had represented. They never knew that at age eleven I was a regular player for the under 14s junior village team; at the age of fourteen, I played a game in my hometown stadium in front of twenty thousand supporters; at the age of fifteen, I was selected as one of the top eleven players to represent my hometown in a regional tournament; and at the same age, I was scouted to play for a semi-pro futsal team in the first division adult league in Jundiaí.

To this end, I don't blame my parents for the lack of support. Perhaps, their socio-cultural-economic background directed them to the notion that football is something unvaluable and unnecessary in life. Besides, they had to work hard as inflation in the 1980s in Brazil reached an annual average of 330% (see Civita, 2008; Oyen, Miller, & Samad, 1996). Having to live under such an economic situation severely restricted my playing and pursuing a dream of becoming a professional player. I had, as did my brothers and sisters also, the responsibility of studying and at the same time making money for the overall financial contribution to our family. My first job was in a vegetable farm when I was about nine years old. I am not exactly sure for how long I worked there, but I think it was about two years in total. During this period I also sold ice blocks in my villages and the surrounding area. I started these jobs more as a curiosity because older peers were doing the same, but when my father passed away, work became a necessity. This is when I started shining shoes in the city centre of Jundiaí, at the age of twelve. After two years doing that, I got my first full time registered job at Irmãos Martins S/A, a factory that manufactured metalwork. As a full time worker, all of my schooling was transferred to evening classes and my playing time was reduced to the weekends. In short, I could not attend trainings, so I missed the opportunities to represent my city and also to keep playing futsal at a reasonably high level.

As life went on, some of my dreams faded away and new directions and opportunities emerged. From that group of childhood friends only Carlinhos reached the top level of football in Brazil, not as a player but as goalkeeper coach. For me, my life has taken new direction as I have now been living outside Brazil for more than half of my life. However, I still have as strong a connection with Brazilian culture as I had twenty two years ago, especially in relation to football, which as fate would have it, became a way of my making a living through coaching.

Since I left Brazil in 1990, I have gained experience and coaching qualifications in football in Japan and New Zealand. In Japan, I coached youth teams for nearly ten years and since I came to New Zealand in 2002, I have been involved in coaching futsal and football to players of different levels, age groups and nationalities. From time to time I go back to Brazil to (re)study football. For example in 2007, I had the opportunity to complete a football internship programme in two professional Brazilian clubs. In the same year, I got two Brazilian coaching qualifications, one in football and another in futsal. Today, my passion for football and sport in general directed me towards a degree in sports science and subsequently towards this PhD study programme specialising in skill acquisition.

To this end, as well as acknowledging my personal background to prepare the readers for my subjective interpretation of the findings, it is also important to note that more than reducing this piece of writing to personal experiences for my own indulgence, this short autobiography is both an attempt to illustrate the popularity and social contexts of football in Brazil, and to offer a brief synopsis as to how I have arrived at my research endeavour. As I hope to make clear, my personal experience and my research endeavour are inextricably intertwined.

Now, as a budding academic sport scientist, I see how relevant the socio-cultural and historical-economic contexts have been in shaping my personal background, which in turn

has been influential on the crafting and interpretation of this PhD study programme. Through all this, I also see how important it is to analyse those contexts in order to understand how Brazilian football players acquire and develop their football style. That is, the *ginga* style.

CHAPTER 1

Introduction

1.1 On Ginga: The Perceptual-Motor Skills of Brazilian Football Players

Brazil is a nation characterised by immense socio-cultural-economic diversity formed by the influences of the native indigenous people, former African slaves, Europeans, Asians and Middle Eastern immigrants and a range of socio-historic struggles (see Branco & Williams, 2005; Meade, 2003; Smith & Vinhosa, 2002). Despite the differences, a common theme that purportedly unites Brazil is football. In other words, football unites in a sense that many Brazilians, including myself, is in one way or another influenced by it (Lever, 1995; Mason, 1995; Miller & Crolley, 2007).

Much like opening Pandora's Box, this issue is as complicated as it is paradoxical. Indeed, it is hard to understand why many Brazilians are passionate about football given the numerous negative issues involved such as corruption, violence between supporters, unsafe stadiums, and exportation of its best players. Such an observation is not new and many have attempted to answer this question from different angles (see Chapter 4 for further details).

While football may be Brazil's biggest passion, for many Brazilians, including myself, the ethos of the game is not just about getting results, it is also about achieving a level of high performance in style. In fact, according to Mason (1995, p. 123) "It was the style of Brazilian football which also contributed to the passion for it". Such accounts have been reported in many different forms of texts some of which I will highlight.

Many writers, academics, journalists and business people alike have identified, explored, and romanticised the concept of Brazilian football style as graceful, joyful, artistic, flamboyant, and with a lot of wit and flair (see Bellos, 2002; Filho, 2003; Miller & Crolley, 2007). Bellos (2002) points out that "Brazilians invented a flamboyant, thrilling and graceful style that has set an unattainable benchmark for the rest of the world" (p. 1). While some critics argue that Brazilian football today has lost the attractiveness of *futebol-arte* (artful football), in favour of more emphasis on physicality, on team organisation, many football

fans and commentators alike would agree that Brazil is still producing exciting individuals exhibiting a Brazilian style of playing. A style exemplified by Neymar, the current national team player who, according to the critics, has brought back the essence of the Brazilian way of playing (see Helal, 2011).

Through a series of popular Nike advertisements, Brazilian football style has been commercialised around the world as *joga bonito*, two Portuguese words that translated to English mean *play beautifully* (see YouTube for many video clips on *joga bonito*). Different from the pragmatic physical way of playing, *joga bonito* combines creativity with athleticism, adding an artistic element to football. As sociologist Rory Miller elucidates, *joga bonito* is "the sporting expression of other key elements of Brazilian popular culture, samba and capoeira. . . a style of football that [is] not only world-beating but also entrancing for spectators to watch" (Miller, 2007, p. 8).

While Nike helped to globalise the Brazilian football style as *joga bonito*, in Brazil this way of playing has been referred to as playing with *ginga*[3] (pronounced *jinga*), a term that literally means *sway* (Whitlam, Davies, & Harland, 1991). From a movement science perspective, *ginga* can be defined as a holistic fluid movement of the body joints, especially between the ankles, knees, and hips, which together with the ball, is used to deceive the opposition in an elegant style, be it when controlling, dribbling, or passing the ball. In truth, it is a high level of expertise of perceptual motor skills. Indeed, *ginga* encapsulates all of the traits attributed to the Brazilian style of playing in which the *craque* (superstar) is capable of

[3] Although it is beyond the scope of this thesis to discuss the reasons for Nike marketing Brazilian football style as joga bonito rather than ginga, I believe that a rationale could be for the fact that the meaning of ginga in Portuguese, as explained above, differs completely from the meaning of ginga in English, which is a person with red hair. In contrast, the strong identity of ginga with Brazilian football leads "Penalty", a Brazilian sports enterprise, to end its latest advertisement with the slogan "Penalty Ginga Brasil" (see JPsports, 2011).

displaying aesthetic body movement coordination combined with the ability to improvise and create unexpected moves and play (see Soares & Lovisolo, 2003)[4].

However, it is important to clarify that the term ginga itself comes originally from *capoeira* (see Downey, 2005), which is a form of Brazilian martial art that relies on swaying (ginga) as the key movement to outmanoeuvre the opposition. In the words of Downey (2008), capoeira is described as:

> … an acrobatic, danced game done to distinctive vocal and instrumental music. Derived from African challenge dances and shaped by slavery, urban gangs, and official repression throughout the 19th and early 20th centuries in Brazil, capoeira today has become a form of physical education and martial art found around the world. In a capoeira "game," or jogo, two players strive to outmanoeuvre, trip, or knock each other to the ground using a wide array of kicks, head butts, leg sweeps, and evasive manoeuvres. At the same time, they balance aggression with a need to demonstrate dexterity, creativity, and artistic flair in response to changes in music provided by a small orchestra… (p. 204)

From samba and capoeira to football, the initial concept of *football ginga* can be first seen in the words of one of the greatest social scientists and writers in Brazil, Gilberto Freyre (1938 as cited in Goldblatt, 2006, p. 282). The vocabulary he uses, describe what came to be understood as football ginga. In his words:

> Our style of playing football seems to contrast to the European style because of a set of characteristics such as surprise, craftiness, shrewdness, readiness, and I shall even say individual brilliance and spontaneity, all of which express our 'mulattoism'…Our passes…our tricks…that something which is related to dance, to capoeira, mark the Brazilian style of football, which rounds and sweetens the game the British invented, the game which they and other Europeans play in such an acute and angular way – all this seems to express…the flamboyant and at the same time shrewd mulattoism, which can today be detected in every true affirmation of Brazil.

Here, it is interesting to note how the analysis of football can contribute to the understanding of cultural identity. For instance, Freyre begins to define the Brazilian football style as a

[4] Bear in mind that, under the context of ginga's definition, I am emphasising individual ability rather than team work. I mean, I could interpret ginga as a way of team style of playing. However, this is not the aim of this research, which rather, focuses primarily on the analysis of skill and expertise in individual Brazilian footballers rather than team work.

product of black culture (mulattoism). Later, Mario Filho, a celebrity journalist, wrote a seminal book in 1947 called “O Negro no Futebol Brasileiro” (see Filho, 2003) translated in English as, “Blacks in Brazilian Football”. This book has interpreted football ginga as a product of a multiracial Brazilian society and has become the primary source for related historiographies (see Freitas, 2006). However, for Soares (2001) this book lacks empirical evidence which makes it merely romantic literature. Nonetheless, despite the controversy, Filho’s vision has contributed immensely to the understanding of the formation of Brazilian football style, as well as opening the issue up for further exploration (see Freitas, 2006).

More recently, to delve into this unique style of Brazilian footballers, a film documentary entitled “Ginga: The Soul of Brazilian Football” was produced and released in 2006 by O2 Filmes (see H. Levine, Machado, & Alves, 2005). Divided into ten chapters, the film focusses on the relationship between ginga and broader contexts of Brazilian society such as geographic, economic, and socio-cultural aspects. As such, the main characters are eight diverse people, including males and females who come from different social classes, ethnic backgrounds, and geographic regions in Brazil. In addition, Robinho, a current professional football player, and Falcão, a current professional futsal player, were interviewed in this documentary.

To illustrate the socio-economic disparity in Brazil, the film begins by contrasting the lives of two young footballers: one skinny, mullato youth from the *favela Rocinha* in Rio de Janeiro and one tall, white, well-nourished youth from a middle class family in São Paulo. While the first plays on a dirt field, in bare feet, and has to get public transport to go to trials, the second plays at private sports clubs with all the necessary gear, and his mother takes him around by car for the trials. The film presents other polarised case studies including a young Amazonian male contrasted with the ordinary life of a young black capoeira sportsman in

Salvador, the middle class life of a female footvolley player from Rio de Janeiro, and a young woman from São Paulo who holds the world record for football juggling.

The film shows the relationship between football and other elements of cultures such as dance, capoeira, and religion by highlighting the routine of the female footvolley player who also likes to samba in the night clubs in Rio de Janeiro, the capoiera sportsman and his friends who show their ginga in beach soccer games in Salvador, the young Amazonian man who divides his passion between football and *forró* (another type of Brazilian dance), and the history of the famous Robinho, who grew up playing football surrounded by the rhythm of samba which he himself has the ability to dance with skill. Religious influences are also explored: the black youth from the suburb of São Paulo prays with his protestant family for god to bless him in his football trials, the Amazonian man hopes to be blessed to play well via the intervention of a lady who practices Voodoo, an African-Brazilian religion. The contrast of faith continues to be highlighted with the capoira sportsman professing his faith to another African Brazilian religion which worships *Iemanja*, the Goddess of the ocean.

Through this film it is also noticeable that Brazilians play many different forms of football, in different environmental conditions, under different rules and with different equipment. In other words, Brazilians play football in many different conditions, regardless of their geographic region. However, it is the geographic conditions associated with socio-cultural-economic contexts that constrain their choices of where, how, and what kind of football they play. For instance, as shown in the film, it is common to see people playing games of footvolley and beach soccer in coastal cities like Rio de Janeiro, Santos, and Salvador. In São Paulo, a city of twenty million people that has a lack of space and problems with security, it is normal to find apartment buildings with a small futsal court on the roof where middle class children can play safely. On the soft sands of the Amazon River, football

can be played and practised with improvised goalposts and sticks that replace plastic cones for the physical-technical training as shown in the film.

In summary, this film captures the passion for football throughout Brazilian society as well as its diversity. Regardless of their geographic, economic, and socio-cultural context, Brazilians appear to play with the love of the game, but also shaped by other motivations such as social mobility, identity expectations, and careers opportunities. In fact, for some, football will be their best chance of improving their socio-economic prospects. Finally, as the film portrays, *ginga*, the *sway*, is embedded in almost everything that Brazilians do, the way that they walk, talk, and approach everyday life. As a result, this sway has arguably been incorporated into the way that Brazilians play.

Indeed, football with ginga has become a locus of national identity in Brazil, a sport that has given many working class people a chance to dream (see Ascher, 1994; Bellos, 2002; J. Rocha, 2000). I think that when Charles Miller, one of the often-cited pioneers of Brazilian football (see more details in Chapter 4) brought the game to Brazil at the end of the nineteenth century (see Meade, 2003; J. Rocha, 2000), he could not possibly have imagined that football would become such a social phenomenon, especially since football was a sport for the elite, played as a form of learning, ironically, moral values through the idea of *fair-play*, as well as a means of getting fit.

As I will detail below, in the early years, the poor, mulatto, and black people were not accepted in their teams (see Filho, 2003; Taylor, 1998). Once again, ironically, when the mulatto and black players began to be increasingly incorporated into teams in the 1920s and 1930s, the concept of playing football in Brazil changed and the national football style started to emerge (see Franco, 2007; Lopes, 1994; Priore & Melo, 2009). Since then, the characteristic Brazilian football style has been retained across generations. Along the way, by playing with a combination of outstanding individual skill and collective fluidity, Brazil has

won a record of five Fifa World Cups and has produced more than 50 years' worth of internationally-recognised players with excellent perceptual-motor skills, including Pelé, Socrates, Zico, Ronaldo, Kaká, and many others (Benson & Sinnott, 2006). Arguably, no other country can match Brazil's consistency and performance levels in the competitive 'furnace' that is association football on the international stage (see Bellos, 2002; Lever, 1995).

While, as a Brazilian, this impressive track record makes me proud, as an academic I need to formulate a number of questions. For instance, given the remarkable accomplishments of Brazilian football, what are the environmental constraints which have historically shaped the national style of football in Brazil? How does the characteristic style capture the influences of social, historical and cultural constraints on Brazilian football performance? This thesis represents my attempt to provide some answers. Most importantly, however, in exploring such broader questions, I will specifically attempt to address how this style has led to player development of such a high calibre of expertise of perceptual-motor skill [5].

1.2 Research Question: On Perceptual-Motor Skills and Expertise

It has been argued that for success in any sport, the acquisition and refinement of perceptual-motor skills is essential (see Williams & Hodges, 2004). From this view, many theories and models have been developed, contributing to a better understanding of the process of acquiring such fundamental skills. One of these models is the '*constraints-led approach'* to

[5] It is interesting to note that unlike many other top football nations around the globe, Brazil does not have a central standardized training system which coaches and players follow. Brazilian coaches and players acquire their coaching and playing skills from many different sources, including from their own experience. Thus, it will also be pertinent to understand how Brazil, with such a variety of forms of training, appears to develop players from north to south, east to west, with similar characteristics in terms of perceptual-motor skills.

skill acquisition, which postulates that perceptual-motor skills emerge from the interaction of three constraints, categorised as organismic, task and environmental constraints (Newell, 1986) (see Figure 1). In applying this model, Brazilian football provides a useful example. In other words, this model is particularly relevant to the development of football expertise of Brazilian players who, independent of the stage of learning (i.e. organismic constraints), tend to play varied forms of football such as mini-games, futsal, beach soccer, street soccer, and 11-a-side. Young Brazilian players typically practice on different ground sizes and surfaces (i.e. physical environment constraints) under different rules and with different equipment (i.e. task constraints).

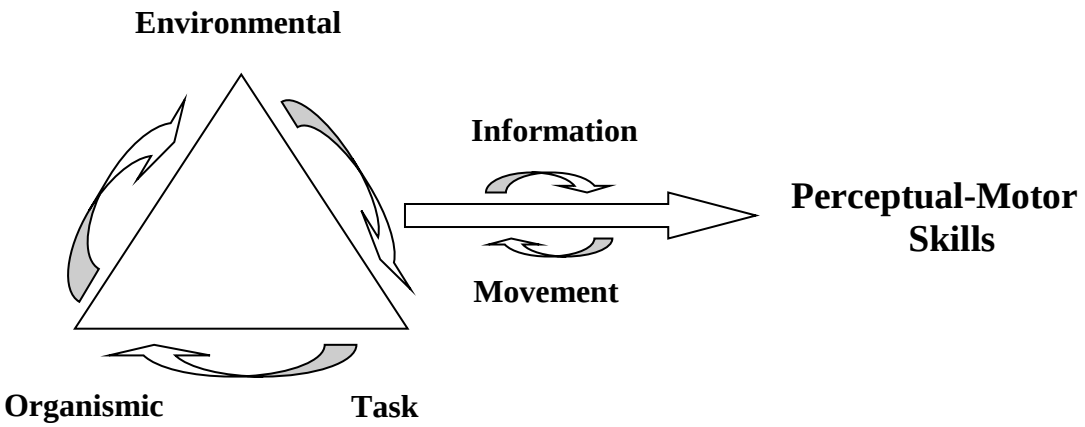

Figure 1. The Constraints-Led Model showing how perceptual-motor skills (in the form of functional information-movement coupling) emerge from the interaction of key constraints on the performer (Adapted from the ideas of Newell, 1986).

In the following Chapter, I will further detail the constraints model, including definitions and an explanation of the theories and mechanisms underlying the model. But for the moment, I would like to emphasise the fact that there is a large body of empirical research on organismic constraints (e.g. *coordinative structure*: Anderson & Sideway, (1994); Vereijken, van Emmerik, Whiting, & Newell (1992); *emergence of walking in infants*: Thelen, Ridley-Johnson, & Fisher (1983); *focus of attention*: Wulf, (2007)) and task constraints (e.g. *size of*

equipment: Beak, Davids, & Bennett (2002); Button, Bennett, Davids, & Stephenson (1999); *instruction and feedback*: Al-Abood, Davids, & Bennett (2001); Hodges & Franks (2001); *interceptive actions*: Davids, Savelsbergh, Bennett, & Van der Kamp (2002)). However, there is a paucity of skill acquisition research on the physical environmental constraints (e.g. *birthplace effect*: Côté, Baker, & Abernethy (2007)), as well as, and especially, on the socio-cultural environmental constraints.

Arguably, this is understandable due to the fact that research is shaped by historical, philosophical and traditional roots, as well as by the nature of the topic (sees Denzin & Lincoln, 2000). In this sense, while the task and individual constraints can be best measured reductively by examining cause and effect relationships amongst variables, the socio-cultural environmental constraints cannot, because they are likely to be too complex and dynamic constraints. Environmental constraints change constantly as society's norms and patterns are in constant transformation, which makes it difficult to identify specific variables (see Creswell, 1998). Therefore, socio-cultural analysis demands other forms of inquiry, such as qualitative methods, which enable the researcher to inductively explore evidence in situ, so that a more contextualised understanding of the topic can be accomplished (see Creswell, 1998; Denzin & Lincoln, 2000).

With this in mind, an analysis of the socio-cultural environmental constraints is fundamental to expanding the knowledge of skill acquisition and in turn further elucidating the constraints-led approach. Therefore, the aim of this programme of work is to investigate the relationships between socio-cultural constraints and the development of perceptual-motor skills of Brazilian football players. On this basis, the central questions of this PhD research are:

- What are the influential environmental constraints on the development of perceptual-motor skills and expertise of Brazilian football players? And, how have players been affected by those constraints?

To be able to address these questions effectively, the present programme of study investigates a variety of socio-cultural contexts of Brazilian football through a multi-qualitative methodological approach, based primarily on a proposed framework termed: "contextualised skill acquisition research" (CSAR). The theoretical foundation of the CSAR framework is rooted in the principles of the Constraints-Led Approach conjoined with the philosophical assumption of the interpretive paradigm, the methodological principles of Bronfenbrenner's bioecological model, and with the ethnographic strategy of inquiry. Under this perspective, the key tenets of the interpretive paradigm provided suitable philosophical assumptions for the required form of qualitative methods demanded for this kind of research. Additionally, Bronfenbrenner's bioecological model of human development served primarily to organise constraints according to their socio-cultural environment context. Further, the ethnographic strategy of inquiry was useful to guide data collection which was generated by the triangulation of three techniques commonly employed in this type of research: open-ended interviews, participant observations, and historical-contextual analyses (see Chapter 3 for further details). Historical analyses of the socio-cultural environmental constraints of Brazilian football were conducted first to inform the later interviews and participant observation methods (see Chapter 4 for further details).

1.3 Significance of the Study

The objective of this PhD research programme was not to test or confirm hypotheses or assumptions in a nomothetic manner, but rather to explore the topic so that data could emerge in an inductive, idiographic way. In doing so, it opened up the doors of opportunities for

investigating ways of conducting empirical research involving socio-cultural mores. Furthermore, it also promoted opportunities to critically analyse the proposed CSAR framework so that implementations in future research can be made. Ultimately, the major purpose of this study was to offer new theoretical, epistemological, and methodological insights, both in terms of the constraints model approach, and in integrating some of the interdisciplinary differences that exist in the body of sciences.

On a theoretical level, as detailed in the previous section, the constraints-led approach has provided major insights, mainly from empirical research on individual and task constraints. However, the model has remained unchanged since it was first developed and today it has almost reached a point of saturation where the dominant way of studying the emergence of skills under constraints can no longer offer new theoretical insights. Thus, to further elucidate the constraints-led model, and in turn further understand skill and expertise acquisition, there was a need to adapt this model into another level or context of research. This was done by investigating issues *beyond* physical environmental constraints, for instance, the socio-cultural ones.

On an epistemological level, skill acquisition research, or more specifically, Newell's (1986) model of constraints has its roots in the ecological perspective, which is based on beliefs and traditions that support an objectivist relationship between the knower and the known, and the nature of reality is about a valid, deterministic truth. Consequently, the quantitative paradigm has been the preferred method of research inquiry (see Chapter 3 for further details). However, the present study was guided by the qualitative research paradigm which has traditionally been used in research where the focus is on an in-depth inductive exploration of the topic; the nature of reality is relative and the researcher is the main instrument in the investigation, leading to a subjectivist relationship between the knower and known (see Chapter 3 for further details). In sum, this study sought to offer significant new

epistemological insights into how to bridge the gap between quantitative and qualitative approaches, and between positivist and social/interpretive research paradigms.

On a methodological level, the main purpose of this thesis was to provide a methodological framework, such as the CSAR, that is useful to investigate unconventional, aversive or infinite complex constraints such as the socio-cultural ones. In doing so, I hope that this framework will provide opportunities for related investigations in the future and in turn enhance further knowledge in the discipline of motor learning.

CHAPTER 2

Theoretical Grounding

2.1 Skill Acquisition: A Constraints-Led Approach

In the quest for knowledge on how humans attain and attune body movement coordination, the science of skill acquisition begun over a hundred years ago (see Davids, Button, & Bennett, 2008; Williams & Hodges, 2004). Indeed, such an endeavour has inarguably augmented the standard of different fields of human society such as sports (e.g. breaking Olympic games' records), health (e.g. motor rehabilitation), and safety (e.g. robots acting against terrorism). Skill acquisition can be described as the learning process of perceptual-motor skills, viewed under the scope of motor behaviour. To this end, the school of motor behaviour encompasses three disciplines of study: motor control, motor development, and motor learning. Motor control refers to studies on how our neuromuscular system functions to activate and coordinate the muscles involved in performing motor skills. Motor development focus on studying the changes in human motor behaviour over the lifespan, the process that underlie these changes, and the factors that affect them. Lastly, motor learning emphasises studies on the acquisition, re-acquisition, and enhancement of perceptual-motor skills (Davids et al., 2008). Bear in mind, however, although there are specific foci of these three areas of research, none of them unrelated. Hence, motor skills are acquired under an intertwined process of learning, developing and controlling at the same time.

Underpinning the discipline of motor behaviour are the theories, approaches and models that have been developed along the history of skill acquisition (Davids et al., 2008). For instance, to name two: the traditional information processing approach, and the contemporaneous ecological perspective. The information process approach is the most prominent theory that has contributed to the literature related to motor control in the last century. According to this approach, information has to be represented and processed by a centre command within the central nervous systems to produce a motor response (Rose, 1997). This process has three stages: stimulus identification, response selection, response

programming (Schmidt & Lee, 1999). Criticism of this approach has increased in the last 30 years. One of the criticisms is due to the fact that the information process approach does not consider the role of environment as an important source of information for action (Rose, 1997). This approach refers to the establishment of representation of an act in the brain, which is acquired as a function of learning and task experience (Araújo & Davids, 2013).

An alternative paradigm to the information process approach is the ecological perspective, which suggests that the term skill acquisition refers to the adaptive and functional relationship between an organism and its environment (see Araújo & Davids, 2013). The ecological perspective comprises two distinct but related theories, which are the dynamical systems and ecological psychology theories (see Davids et al., 2008). In recent times these theoretical paradigms have been merged to form the overarching ecological dynamics framework (Araújo, Davids, & Hristovski, 2006; Seifert, Button, & Davids, 2013). The ecological dynamics framework underpins the constraints-led approach (Davids, Shuttleworth, Araújo, & Renshaw, 2003), which explains the process of change in movement behaviour allied to the process of learning and developing (Araújo, Davids, Bennett, Button, & Chapman, 2004).

According to Davids et al. (2003) a constraints-led approach has been promoted as a framework for understanding how people acquire coordination patterns for sport and physical activities. This approach suggests that the major role of the coach or teacher is to manipulate key constraints in the learner in order to facilitate discovery of functional movement behaviour (Davids, Araújo, Shuttleworth, & Button, 2004). For further clarification, I will next present an overview of the theoretical ideas underlying the constraints-led approach. This includes the notion of ecological psychology and the tenets of dynamical systems theory. Subsequently, Newell's model of stages of learning will be outlined followed by the highlight of one of the objectives of this thesis which concerns sport expertise.

2.2 Ecological Psychology

Ecological psychology is a theoretical paradigm that has in the last few decades transcended the boundaries of psychology reaching strongly into the field of skill acquisition. Ecological Psychology is a term that, Gibson (1979) in particular, used to stress the importance of a synergetic relationship between a performer and the environment (Dicks, Davids, & Araújo, 2008). Biological organisms, including humans, are surrounded by a great array of energy flows, that can act as information sources (e.g. optical, acoustic, proprioceptive) to support movement behaviour, including decision making, planning, and organisation during goal directed activity. Gibson (1979) stated that an organism's movement generates information that, in turn supports further movement in a cyclical process. The classical statement that best captures his ideas is: "We must perceive in order to move, but we must also move in order to perceive" (Gibson, 1979: pg. 223).

In sport, these ideas imply that learners need to assimilate relevant properties that produce unique patterns of information flow in a specific environment (Davids et al., 2003). In fact, flow patterns act as invariant information sources to be picked up by individual performers to constrain their actions (Davids et al., 2003). Thus, learning in sport depends on the fine adjustment of the functional relationships between movement and information in specific contexts, known as information movement coupling (Davids et al., 2003). For instance, passing in soccer is an important skill used to maintain possession of the ball in an attempt to create opportunities for scoring goals. So, in order to pass the ball (action) we must perceive the positioning and distance of the receiver or the positioning of the opposing players to determine the passing direction, timing, and speed. However, in order to perceive the distance and positioning of other players we must also move with the ball first before passing it.

The importance of the performer-environment relationship was further emphasised by Gibson's (1966, 1979) theory of affordances. In this theory he asserted that an animal's behaviour is visually guided by perception of the opportunities for action that are offered by objects in the environment (see Fajen, 2005; Fajen, Riley, & Turvey, 2009). Gibson (1966, p. 285) stated that "When the constant properties of constant objects are perceived (the size, shape, color, texture, composition, motion, animation, and position relative to other objects), the observer can go on to detect their *affordances*….What they afford the observer, after all, depend on their properties" (see Jones, 2003).

Similarly, Fajen et al. (2009) asserted that the theory of affordances should be considered as a powerful theoretical concept to study perception and action in sport. To this end, an important feature of ecological psychology is the emphasis on real world studies of behaviour as opposed to the artificial environment of the laboratory. With this in mind, Gibson (1979) regarded perception as "a keeping-in-touch with the world, an experiencing of things rather than a having of experiences" (p.239).

In a similar line of focus another ecological psychologist Brunswik (1955) proposed the representative design framework to study the interrelations between a performer and the environment from which behaviour has emerged (see Araújo, Davids, & Passos, 2007; Dicks et al., 2008). Thus, representative design was proposed as a methodological framework for the design of experimental settings that should allow participants to exploit the inherent adaptive nature of their perceptual systems as evident during everyday interactions with the environment. In recent times, movement scientists have called for increased emphasis on representative designs within research studies in order to preserve the perception-action relations that are specific to an organism and a performance environment (Pinder, Davids, Renshaw, & Araújo, 2011; Seifert et al., 2013).

In this regard, the present thesis shares similarities with Brunswik's (1955) idea of representative design and the paradigm of ecological psychology (Gibson, 1979). As you will see in Chapter 3, all data were collected in situ in an inductive manner so that participants could explore their view on Brazilian football.

2.3 Dynamical Systems Theory

Dynamical systems theory, also known as chaos, complexity, or nonlinear dynamics, originated in the mathematical and physical sciences to explain systems that change over time (Thelen & Smith, 1994). In the words of van Gelder and Port (1995), a dynamical system is "any state-determined system with a numerical phase space and rule of evolution (including differential equations and discrete maps) specifying trajectories in this space" (p.9). As Davids, et al. (2008) pointed out, "the numerical phase space refers to all the hypothetical states of organisation into which a dynamical system can evolve. In biological movement system these states correspond to patterns of coordination" (p. 32). Dynamical systems can be developed along different trajectories and can reach different organisational states, mainly because they are 'open' systems surrounded by energy sources that can be used as constraints to organize stable functional patterns of organisation (Davids, et al., 2003). In dynamical systems, these stable functional patterns of organisation are called attractors, which are almost synonymous with coordination patterns from the viewpoint of human movement science (Davids, et al., 2003).

In human movement science, human performers are viewed as complex interconnected systems composed of many interacting parts, which are capable of constantly changing their state of organisation (Davids, Araújo, & Shuttleworth, 2005). The interconnected systems correspond to the body systems (e.g. respiratory, circulatory, nervous, skeletomuscular, perceptual) and interacting parts are equivalent to human body components

(e.g. muscle tissue, connective tissue, joints and limb segments) (Glazier, Davids, & Bartlett, 2003). These components are labelled by Bernstein (1967) as motor system '*degrees of freedom'*.

For Bernstein (1967), understanding how coordination emerges in dynamical movement systems, with their huge number of degrees of freedom, was a major problem to be resolved (see Turvey, 1990). As Davids et al. (2005) highlighted, Bernstein's (1967) seminal definition of movement coordination precisely captures the degrees of freedom problem. Bernstein (1967) argued that the acquisition of movement coordination was "the process of mastering redundant degrees of freedom of the moving organ, in other words, its conversion to a controllable system" (p. 127). In short, despite the large number of degrees of freedom, dynamical movement systems show an efficient amount of order, and through the process of self-organisation under constraints, movement coordination spontaneously emerges (Clark, 1995).

2.3.1 Self-Organisation

Self-organisation is the process by which complex systems (e.g. human movement systems) tend to settle into attractors (stable patterns) because these systems are able to exploit energies surrounding them so as to allow functional patterns of behaviour to emerge in specific contexts. As such, the biological systems seem to have evolved the ability to use the energy available in the environment to sustain a functional period of stability (Davids et al., 2008). In fact, it has been discovered that a system's openness to energy flows can prevent disorder because these energy flows may be seen as a source of information, acting as a constraint on the system's behaviour, and enabling it to maintain stability for a relatively short period of time (Davids et al., 2003). It is important to note that constraints on motor development are by no means permanent, but instead are often temporary, and on different

timescales they can strengthen or decay during their interactions such as, performer-performer or performer-environment interactions (see Guerin & Kunkle, 2004). As Davids et al. (2008) pointed out, "The consequence for the behavior of emerging or decaying constraints is an increase or decrease in the self-organising entropy of the system" (p. 42).

A particular focus of interest with regards to self-organisation processes is the phase transition (the movement of micro components of a system into a different state of organisation) that can emerge spontaneously in complex systems. It is when many micro components interact and begin to influence each other's behaviour, that self-organisation of a particular system into a different state occurs (see Davids et al., 2014). For motor behaviour theorists, this idea of self-organisation implies that "ideas, perceptions, memories, intentions, plans or, indeed, actions may be best conceived of as emergent, self-organising macroscopic patterns or attractors formed by the interaction of the molecular constituents of the neuro-skeleto-muscular system" (Davids et al, 2003, p. 57). For instance, these system components could be neurons in the brain firing together to form ideas, or groups of muscles and joints working together to form coordination patterns (Davids et al., 2003).

2.3.2 Constraints

Since the 1980s, several scientists have been studying the emergence of human movement behaviour under constraints (Kelso, 1995; Kugler, 1986; Kugler & Turvey, 1987; Newell, 1986). Newell (1986) defined constraints as boundaries that both limit and enable the emergence of functional patterns of movement behaviour in specific contexts. In other words, they limit some movement, but at the same time enable others, providing numerous channels through which specific movement patterns can emerge (Haywood & Getchell, 2009). Thus, during goal-directed behaviour, the neuromuscular systems are controlled by the interaction of key constraints, which channel the mechanical degrees of freedom of the movement

system during learning, resulting in different movement coordination patterns that can be optimised with practice and experience (Davids et al., 2008). As noted earlier in the Introduction Chapter, the key constraints categorised by Newell (1986) are: task, environmental, and organismic constraints.

Task constraints refer to the rules of a sport, the implements or the equipment used during motor learning, and augmented information such as instructions and feedback (Davids et al., 2003). In sport, coaches and teachers often manipulate task constraints in order to help learners search for functional and individualised movement pattern solutions (Araújo et al., 2004). For instance, soccer juggling drills may be conducted with balls of different sizes in an attempt to facilitate skill acquisition and improve close control of the height of the ball. Another important task constraint that athletes can use to coordinate actions is the information available in specific performance contexts (for further details see section above on ecological psychology).

Environmental constraints can be physical in nature, such as ambient light, sounds, temperature, surfaces, and gravity (Davids et al., 2003). A coordination movement pattern for a particular task may be adjusted according to the environmental constraints available. Consider for example, a soccer chip kick on grass as compared to a chip kick on a wooden gym floor. If the kicking task criteria is the same for both surface conditions (e.g. achieve the same distance and height of the ball), the lift of the ball might be facilitated on grass due to the softer surface. Thus, if a performer wants to achieve a similar distance of the ball landing position and height of the ball when kicking on a wooden gym floor, then he/she may have to adjust the coordination movement pattern. For instance, such adjustment could be achieved by increasing the kicking foot velocity.

However, as Haywood and Getchell (2009) pointed out, some environmental constraints can be socio-cultural rather than physical, including gender, socioeconomic status,

ethnicity, societal expectations, values, and beliefs. Although studies of the relationship between socio-cultural environment constraints and the development of motor skills are not new (see Newell, 1986), only a few studies, undertaken mainly in Africa, have addressed this issue (e.g. Super, 1976, 1981). In one such study, Super (1976), investigated infant development for three years in a Kipsigis farming community in Kokwet in Western Kenya. Teaching children to sit, stand and walk is part of the culture of this community, as Super (1976) found that over 80% of the mothers in Kokwet deliberately teach their babies those motor skills. A total of 64 healthy children, as well as their mothers, participated in the study. The data were collected once a month for their first year of life, and babies' daily life was observed at random once a week. In addition, the babies' mothers were interviewed about their ways of rearing their children and their views on motor development. Findings showed that babies in Kipsigis were able to sit, stand and walk significantly earlier than babies in America (see Super, 1976).

It could be argued that an additional key constraint manipulated in Super's studies was the task constraint (i.e., teaching strategies), as well as the socio-cultural environment constraints. As Newell (1986, p. 51) pointed out, Super's cross-cultural studies, amongst others "…are primarily manipulating task constraints rather than environmental constraints, as the key feature of rearing and cross cultural studies is the specific task interactions that the child experiences rather than the effect of the relative time independent constraints of the environment per se". More recently, Haywood et al. (2009) have dedicated an entire book chapter to socio-cultural constraints in motor development, pointing out that some of the socio-cultural constraints that influence the development of motor skills are: gender, family, peers, race, ethnicity, and socioeconomic status. Although the authors do not offer any critical analysis of the relationship between socio-cultural constraints and motor

development, it is still an important contribution, especially in terms of *'opening the doors'* for more related discussion, which in turn may generate further empirical research.

Organismic constraints refer to the structural and functional characteristics of the individual performer. Structural characteristics can be a performer's weight, height, and body mass composition, whereas functional characteristics can be the performer's connective strength of synapses in the brain, cognition, motivation and emotions (Davids et al., 2003). Two other important characteristics of an individual performer are the skill level and the level of motor learning (Davids et al., 2003). They are the core of Newell's (1985) model of stage of learning which, under the view of the constraints led approach Newell's (1985) model of motor learning captures how Bernstein's (1967) degrees of freedom problem can help reveal the distinction between performers of different skill levels.

2.4 Newell's (1985) Three-Stage Model of Learning

Bernstein (1967) highlighted the formation of functional muscle-joint linkage, also known as coordinative structure, as a solution for constraining the huge amount of degrees of freedom available in the human movement system. Coordinative structures act as physical constraints and these constraints can identify how an individual movement system's degrees of freedom can become mutually dependent (Davids et al., 2005). Based on this insight, Newell (1985) proposed a model of learning that can be a useful framework to understand the process of movement coordination patterns. This model of learning was classified into three stages: coordination, control and skill stages.

The coordination stage of learning is the stage where the learner is engaged in assembling the basic movement coordination pattern in order to achieve a task goal (Newell, 1985). At this stage, learners tend to freeze the degrees of freedom as a means of reducing the control problem, but with the consequence of limiting movement around key joints (Newell,

1985). These characteristics of novice performance have been identified in tasks such as pistol aiming, dart throwing, simulating skiing, and soccer (see Davids et al., 2002). Once novices have acquired the basic movement coordination patterns to achieve a task at the basic level, then they need to learn how to vary the basic movement to fit changing environmental task demands. Learners who can flexibly adapt these basic movement patterns to different environment conditions are at the control stage of learning. Finally, in the skill stage, expert performers can vary the parameters of the action (e.g., force, duration and amplitude of the movement pattern) in an energy-efficient manner in order to fit changing circumstances in the dynamic environment (Davids et al., 2003).

A soccer kicking study conducted by Anderson and Sideway (1994) revealed support for this idea of stages of learning. In their study, the range of motion of the hip and knee during the kicking practice was very small compared to more skilled and experienced players, who showed coordinative structures characterised by greater values of hip and knee flexion and extension. After 10 weeks of practising, the coordinative structures of novices and skilled players were quite similar. This result supported Newell's (1985) model of learning, based on Bernstein's (1967) insights.

2.5 This Thesis: Sport Expertise

Research on sport expertise has been analysed from different paradigms, approaches, and methodologies (see Williams & Hodges, 2004). A number of different approaches and theories have been proposed to explain how coaches and athletes should train and be trained in order to achieve excellence (see Davids & Baker, 2007; Farrow, Baker, & MacMahon, 2013). For instance, Newell and Rosenbloom (1981) proposed the power law of practice as the basis for performance improvement. Subsequently, Ericsson and colleagues (e.g., Ericsson, 1996; Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Romer, 1993;

Ericsson & Williams, 2007) have reinforced this idea that sport expertise is attainable as a function of intense prolonged effort to improve performance. This construct has been operationalised as deliberate practice. According to Ward et al. (2004), this construct was built on two propositions: 1) Expert levels of performance are achieved after an extensive involvement within a domain - the 10-year rule; 2) The factor innate talent may influence some of the defining characteristics of expertise but the core of expertise attainment relies on the direct engagement in relevant activities (see Ericsson et al,. 1993).

Somewhat, in contrast to the theory of deliberate practice is the notion of deliberate play postulated by Côté and colleagues (e.g., Côté et al., 2007; Côté & Hay, 2002). In their view, they argue that expertise is not attained by simply accumulating a putative number of hours of practice, but also by being exposed, during the development stage, to a lot of hours of games that resemble sports (Côté et al., 2007). Hence, deliberate play involves activities that foster adaptive skill (e.g., backyard games/street matches) and the focus is on enjoyment rather than skill improvement per se. Moreover, in Côté and Fraser-Thomas's (2008) view, the process of expertise attainment is dependent on the quality and quantity of coaching, playing and practicing. However, other variables such as physical and psycho-social environment constraints have also to be considered whilst acquiring sports skills (see Baker, 2003; Côté, Baker, & Abernethy, 2003; Petlichkoff, 1993).

In drawing attention to this issue, an increasing number of studies in sport science have highlighted the importance of physical as well as socio-cultural environmental constraints on the acquisition of sport expertise (Krebs, 2009) , although the knowledge in the field is still lacking. As Araújo (2007) pointed out, there is a need to consider socio-cultural constraints as integral constraints on skilled action. As examples, why do certain nations have a consistent and outstanding record of producing talented athletes in certain sports? To name but a few, Canada with ice hockey, Kenya with distance running, Jamaica with sprinting,

Australia with rules football, India with cricket, New Zealand with rugby, America with basketball, and Brazil with football, each has been historically associated with high achievers in the international competitive arena. Under this context, a question of interest is: What are the factors or constraints that influence a nation to become so successful in specific sports?

In exploring this issue further, Salmela and Moraes (2003, 2004) investigated the role of coaching, families, and cultural context on the development of Brazilian football expertise. Their results show that many players aged 16 to 17 years received little to almost no structured coaching, in contrast to a multitude of unstructured football experiences played on the streets. More recently, Araújo et al. (2010) provided a position study delineating the role of ecological constraints on expertise development. Using also Brazilian football as a research vehicle and alluding to qualitative research in the form of document analysis, Araújo and his colleagues argued that unconventional, even aversive, environmental constraints may play an important role in the development of sport excellence. One of their key arguments, also relevant to this thesis, regards the notion of playing unstructured street football (i.e., pelada) from a very young age. Several former elite football players stated how important pelada was as part of their process of acquiring football skills (see Chapter 5 for further details). From a skill acquisition point of view, the benefits of this type of unstructured form of playing can be based on the notion of self-organisation and discovery and/or intrinsic learning (see Davids et al., 2008). Moreover, from a psychological point of view, pelada provides opportunities for playing purely for the love of the game which involves passion, pleasure and enjoyment.

In a similar line of focus, this thesis uses Brazilian football as the research vehicle to further explore the socio-cultural constraints influencing the development of expertise of Brazilian footballers (see Chapters 1, 3). However, this is not a matter of cultural favouritism,

as explained earlier. Indeed, as pointed out by Araújo et al. (2010) Brazil provides rich and stimulating environmental constraints useful for the analysis of expertise in football.

2.6 Summary

To summarise, this chapter has delineated some important theoretical concepts that inform the approach adopted throughout this thesis. In particular, the principles of ecological psychology and dynamical systems theory married together to form the ecological dynamics framework provide the perfect platform through which to study the role of socio-cultural constraints upon sport expertise. Indeed a holistic approach to the key questions addressed in this thesis is the most appropriate way to generate meaningful and rich information given the complexity and intertwined nature of the variables in question. Whilst the sports expertise literature has been guilty of somewhat polarising the influence of either practice or inherited attributes upon motor learning there are nonetheless many useful lessons to be learnt from this programme of work. For example, sport expertise development takes place over many years and includes numerous formal and informal pathways that athletes can take to excel. Importantly, Brunswik's advocation of representative design from ecological psychology provides strong justification for the nature of the fieldwork and qualitative methods adopted in subsequent parts of this thesis. My next challenge is to delineate how these different theoretical ideas come together to inform the methodological paradigm that I will use to study the expertise development of Brazilian footballers.

CHAPTER 3

Contextualised Skill Acquisition Research: A New Framework to Study the Development of Sport Expertise

3.1 Introduction

Expertise in different performance domains (e.g., clinical, physical education, music, sport coaching) is acquired under a complex and contextualised process. It involves multiple, intangible, intertwined and dynamic environmental constraints that impinge upon a learner's development (Davids et al., 2014). Under the view of dynamical system theory, expertise in sports emerges from the interaction of multiple constraints (see Davids et al., 2008). At an individual level, important interactions amongst constraints could include the relationships that evolve between one's family, playmates/coaches, and specific training activities. In this sense, movement preferences, individual differences and nonlinear rates of development are as much a function of social milieu in which learners have developed as they are of an individual's physiology, anatomy or psychology. From a broader point of view, other environmental constraints can be the strong socio-cultural-historical contexts that influence expertise development in sports around the world, such as rugby union (e.g., New Zealand) and football (e.g., Brazil). To gain insight into such processes, a broad, yet sensitive set of research tools is required.

Traditionally, motor learning research has persevered with a relatively narrow range of research tools emanating from a long history of a positivistic, laboratory-based research paradigm. Such tools seem suitable for investigating how unique personal constraints interact with task-related factors in the skill acquisition process. Under this context, several studies have demonstrated the influence of environmental constraints on the development of sport expertise (Araújo & Davids, 2011). Whilst making important contributions to knowledge, such studies have been limited in scope and fail to consider in depth how informal and even aversive learning environment constraints affect skills development. Therefore, for the study of socio-cultural constraints, other methodologies may be more functional.

In this thesis a contextualised skill acquisition research (CSAR) approach is proposed as a new research framework that is relevant for examining the nature of interacting, dynamic socio-cultural constraints on expertise acquisition. In advocating exploration of socio-cultural constraints via this methodological framework, I also hope to offer new epistemological insights on how to integrate quantitative and qualitative research approaches, as well as positivist and social/interpretive research paradigms. I am not the first to propose a potential solution for these limitations of kinesiology and physical education (e.g., Andrews, 2008; Ingham, 1997). Andrews et al. (2013) paint an explicitly socially critical vision for kinesiology – under the aegis of Physical Cultural Studies as: "an interdisciplinary field ground within a critical curriculum of the corporeal that draws on a range of exciting and innovative methodologies that can provide the languages of, and possibilities for, a politically progressive, socially just, and democratic citizenry." Although not grounded in critical paradigms and political projects in precisely the same way, I too envisage future possibilities in which biophysical sciences and socio-cultural sciences may be inextricably linked. I acknowledge that my tentative contribution to the development of the proposed paradigm is to build bridges across the methodological boundaries between sociology and motor learning in the first instance, rather than offering a unifying approach for the whole field.

Therefore, the aim of this chapter is to outline a new contextualised approach to studying socio-cultural constraints on individuals, proposing an interpretive, multi-method approach to holistically investigate the interacting constraints on an athlete's development pathway. As such, I constructed a rationale for contextualised skill acquisition exemplified by philosophical, theoretical and methodological foundations (see Table 1). The scope of this chapter is limited to justification and explanation of the proposed contextualised skill acquisition approach. In delineating this issue, I explain a rationale for adopting an interpretive research paradigm (in contrast to traditional positivist approaches) for exploring

socio-cultural constraints. The epistemological and methodological assumptions of Bronfenbrenner's Bioecological Model of Human Development are proposed as an underpinning framework for data collection and organisation of material. I advocate for ethnographic strategies of inquiry, followed by a discussion of potential methods for generating and analysing data: contextual analysis, participant-observation, and open-ended interviews. Finally, I discuss evaluation criteria for this contextualised approach viewed from a coherence theory of truth.

Table 1. The philosophical, theoretical and methodological basis of contextualised skill acquisition research. N.B.: for explanatory purposes it is necessary to describe constructs and concepts as independent, however several concepts and ideas in the table are closely linked. Rather than attempting to capture such complex and important relationships through a simplified figure I recommend consulting the suggested sources of evidence and background reading for further clarification.

Construct	**Concept**	**Suggested evidence & background information**
Philosophical influences	Interpretive paradigm	Internal-idealist ontology: Denzin (1989); Sparkes (1992) Subjectivist epistemology: Andrews (2008)
	Holistic model of skill acquisition	Constraints-led approach, e.g., Davids, Button and Bennett (2008); Handford et al. (1997); Newell (1985)
Theoretical underpinnings	The athlete and environment conceptualised as a complex, dynamic system	Dynamical systems theory applied to human behaviour, e.g., Kelso (1995) Ecological psychology, e.g., Gibson (1979)
	Field-based study	Representative design, e.g., Brunswik (1955); Pinder et al.(2011)
	Sensitive to socio-cultural influences	Bioecological model of human development e.g., Bronfenbrenner and Morris (2006); (Moen, Elder, & Luscher, 1995)
Methodological tools	Bricolage	e.g., Denzin & Lincoln (2005); Creswell (2009)
	Ethnography, multi-method	e.g., contextual analysis, observation, field notes, interviews. For overviews, see: Patton (2002); Silverman (2006)
	Versatility and reflexivity	e.g., Dowling (2008); Fawcett (2008)
	Evaluation and coherence	e.g., Sparkes (1992; 1994)

3.2 Philosophical Foundations of Contextualised Skill Acquisition Research

Research in the related sub-disciplines of movement science and motor learning has burgeoned over the past five decades (Button & Farrow, 2012). Traditionally, studies in this area have been guided primarily by methods of quantitative inquiry (Mullineaux, Bartlett, & Bennett, 2001), underpinned by philosophical assumptions of the positivist paradigm (see Abernethy & Sparrow, 1992). Laboratory-based research has been ubiquitous in this positivist approach, where experimental design and methods are rigorously controlled[6]. Traditional analyses have been limited to reductive movement models involving few motor system degrees of freedom (i.e. joints, muscles, body segments). A considerable challenge for researchers is to apply the data and models of motor learning, developed with such laboratory-based tasks, to the study of behavioural phenomena in sport performance and learning environments (Davids, Button, Renshaw, Araújo, & Hristovski, 2006). On a broader but related note, there are increasing concerns that the field of kinesiology has become too fragmented and that the current positivist hegemony may be restricting our understanding of human behaviour. An implication of traditional approaches is the marginalisation of the study of the broader socio-cultural contexts and problematics of human performance and learning (e.g., Andrews, 2008; Larsson & Quennerstedt, 2012).

These issues raise a number of philosophical challenges. While there has been a lot of quantitative research on informational and instructional constraints on action (e.g., Renshaw,

[6] It is important to note that while the majority of laboratory based studies as well as quantitative methods of inquiry are underpinned by the philosophical assumptions of positivism paradigm, it is too extreme to solely equate them all with positivism. Although it is out of the scope of this thesis to thoroughly scrutinise this issue, it has to be considered that some skill acquisition studies would fit better with the philosophical notion of postpositivism paradigm (see below further details on postpositivism). In addition, I hope that as you read this chapter through, it will become clear that my aim is not to criticise one paradigm over another, but rather to show that researchers have the options to work with specific paradigms that suit best their research (for further details see Chapter 3, section: Qualitative and Quantitative Choosing Dimensions).

Chow, Davids, & Hammond, 2010), there is a paucity of qualitative research addressing socio-cultural constraints in the environment (Araújo et al., 2010). It is beyond the scope of this chapter to fully explicate the foundation of positivism, as well as other philosophical orientations, but instead I will briefly highlight and contrast key paradigmatic concepts to discuss how future research might be guided.

3.2.1 Positivist, Quantitative Paradigms

Historically, positivism has been the *dominant paradigm* in many different academic disciplines (see Sparkes, 1992). The positivist paradigm is conceptualised according to realist external ontology, objectivist epistemology, and experimental/manipulative methodology. A major assumption is that a singular reality exists independent of the researcher and that it operates according to natural laws. Thus, the aim of science is to objectively elucidate such a reality through controlled manipulations by the inquirer, while attempting to avoid biases by controlling unwanted interference. In addition, rigorous controlled experimental conditions are used to yield a *valid* and *reliable* nomothetic research programme that can test pre-conceived hypotheses and assumptions underpinned by theoretical frameworks (Guba, 1990). The field of motor learning readily adopted such assumptions from its parent discipline of experimental psychology as it sought to establish itself as a valid, rigorous field of study in its own right (Abernethy & Sparrow, 1992).

The positivist paradigm leans toward quantitative modes of data collection, through which deterministic relationships of *cause* and *effect* are sought in order to report outcomes that can be *generalised and representative* (see Denzin & Lincoln, 2005; Guba, 1990). However, in the last few decades many qualitative researchers have been critical of this reductive model that is premised on being independent of cultural context and politically neutral when it is applied to the infinite, multiply layered complexities of the social world. A

key question concerns how movement cultures are the product of social, economic and historical contexts.

3.2.2 Interpretive, Qualitative Paradigms

Andrews (2008) rejects the notion that socio-cultural constraints can be productively investigated in the same objective way as the natural sciences. Indeed, the richly complex, socio-cultural contexts in which skill acquisition occurs contains a plethora of unconventional 'variables' that can be best illuminated from an interpretive perspective. Specifically, this interpretive approach is centred upon understanding phenomena *within*, not *independent of* their social context.

Qualitative research, however, is not a unified 'church', but cuts across disciplines and fields and encompasses different methods, strategies of inquiry, and paradigms (Table 1). It has a long history and tradition in the humanities, sociology and cultural anthropology. On a philosophical level, Denzin and Lincoln (2005) propose that qualitative research is located on a continuum between postpositivism at one extreme and poststructuralist perspectives at the other. The closer research is to postpositivism, the more realist and objectivist it will be[7]. In contrast, the closer research is situated to poststructuralism, the more relativist and subjectivist the research will be[8] (see Denzin et al., 2005).

Across the qualitative spectrum, there are several paradigms that have underpinned qualitative research in physical education (see Sparkes, 1992). Pertinent to our multi-method approach is the interpretive paradigm. Interpretivists adopt an internal-idealist ontology and a

[7] Postpositivists believe that reality exists, as positivists do. But such reality is imperfectly attainable due to the inevitable influence of the researcher (for further details, see Guba, 1990).

[8] Poststructuralism refers to a school of thought that is very similar to the theoretical perspectives of postmodernism (Fawcett, 2008). "One general distinction (with many exceptions) is that poststructuralism tends to be more abstract, more philosophical, and less political, than postmodernism"(Ritzer, 1997, p. 32).

subjectivist epistemology (see Table 1). The internal-idealist ontology takes reality to be mind-dependent. Consequently, mind and object cannot be separated, signifying that 'the knower and the process of knowing cannot be separated from what is known and we can never hope to see the world outside of our place in it' (Sparkes, 1994, p. 13). Further, interpretivists believe that there are multiple realities, which means that an inquiry must engage multiple interpretations (Sparkes, 1992). With regard to the subjectivist epistemology, reality is constructed and sustained through the meanings and actions of the individual and the researcher interacts and personally engages in the process of investigation (Sparkes, 1992). Therefore, the researcher is the main research tool, which differs to positivism where the main tool of investigation is typically a detached technical instrument, such as, for example, a highly structured questionnaire or a high-speed camera to film skill performance (Sparkes, 1992). Interpretivists believe that investigated phenomena, and hence *data*, cannot be understood in an objective way, but are subject to interpretation.

3.2.3 Qualitative or Quantitative Choosing Dimensions

In summary, the traditional philosophical paradigms that have been adopted by skill acquisition researchers (i.e., positivist, objective) have arguably created an *organismic asymmetry* (Davids & Araújo, 2010) in which the role of the learning environment has been underexplored. Furthermore, the traditional reductionist tendency to consider factors in isolation does little to capture the richness of the complex interactions that typify an athlete's world. A less radical and arguably more practical message, however, is that when it comes to choosing between either qualitative or quantitative research paradigms, one is not superior to the other. Rather each provides a different means with which to conduct research. This is the position adopted in my current programme of work investigating socio-cultural constraints on the acquisition of expertise in sport. It also aligns with the views of Silverman (Silverman,

2006; 2006), who stated that ‘the choice between different research methods should depend upon what you are trying to find out’ (p. 34). These ideas suggest that movement scientists need to consider how a range of interpretive, qualitative philosophies can provide added benefit when examining skill acquisition.

3.3 Theoretical Foundations of Contextualised Skill Acquisition Research

In recent decades, the dominant research philosophy within motor learning has been questioned through emerging theories, namely ecological psychology and dynamical systems theory under the umbrella of the constraints-led approach (see Davids et al., 2008). The framework of ‘ecological dynamics’ conceptualises movement coordination as an emergent property resulting from interacting individual, task, and environment constraints (Seifert et al., 2013). As indicated in Table 1, researchers have also advocated strongly for *representative design*, resulting in a better understanding of the information needed to be included in empirical investigations, whether in the field or laboratory (Pinder et al., 2011). However, whilst theoretical advances such as representative design have had a positive impact within the motor learning discipline, the influence of the environment, and in particular socio-cultural constraints, upon learning have yet to be fully elucidated. The social and historical “context” in which skill acquisition occurs is still undervalued in empirical investigations.

Urie Bronfenbrenner (1995) proposed an important model which may help to strengthen the theoretical basis of ecological dynamics. In general terms, the bioecological model conceives human development as a function of the *interaction* between nature *and* nurture (see Krebs, 2009). Under the notion of contextualisation, mutual co-determination between individual and context provides common ground between the bioecological approach and the constraints-led approach to skill acquisition (Davids et al., 2008). Studying

the mutual interactions between performers and context create an ecological dynamic which can eliminate the organismic asymmetry (bias towards the person) typical of traditional research approaches in the behavioural sciences (Davids & Araújo, 2010). In addition, within the parameters of contextualisation, analysis cannot be maintained with a linear deterministic focus. For this reason, Bronfenbrenner advocated that environmental properties cannot be 'distinguished by reference to linear variables but analysed in systems terms' (Krebs, 2009, p. 117).

While the bioecological model serves as both a theoretical and methodological framework to investigate socio-cultural constraints on expertise development, it cannot serve as a general explanatory theory of skill acquisition. In fact, this research follows the insights provided by Araújo et al. (2010, p. 174), which advocated that:

> Importantly, this model is more a framework for organising knowledge than a [general] theory of sport expertise. To this end, a joint perspective of Gibsonian ecological psychology and dynamic systems theory, the ecological dynamics perspective, is promising with respect to explaining the interaction of constraints at ecological scale (Araujo, Davids, & Serpa, 2005; Araujo, Davids, & Hristovski, 2006; Davids & Baker, 2007, Philips et al., 2010)

Thus, this model will be used to provide methodological guidance for the relevant constraints that affect the development of expertise of Brazilian football players. More specifically, the ecological nested system (i.e. micro-, meso-, exo-, and macrosystems) of the model will be used as a supporting framework alongside the constraints-led approach to guide the ecological nature of the present research. To our knowledge, the bioecological model is unique in the literature in offering an holistic, longitudinal and contextual overview of human development.

3.3.1 Bioecological Model of Human Development

The bioecological model is predicated on the interaction of four key elements which constrain human development (see Figure 1). These elements are the *process*, *person*, *context* and *time* (PPCT) (see Krebs, 2009).

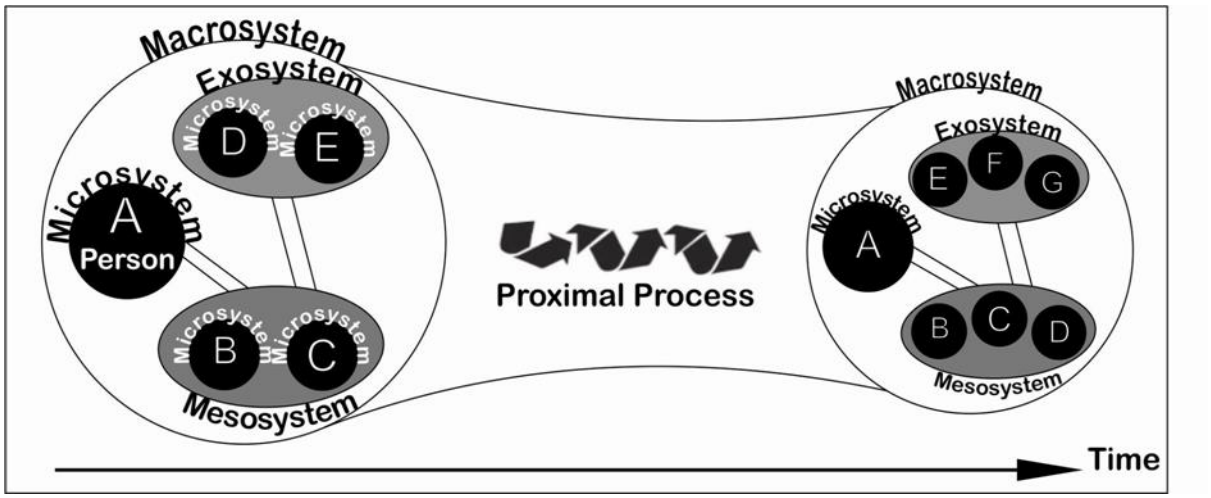

Figure 2. Illustration of Bronfenbrenner's bioecological model. N.B.: In relation to the context, only microsystems are physically located. The others are "events or forces" that influence the person and the particular microsystem under analysis. The mesosystem encompass other microsystems frequented by the person. The exosystem comprises the microsystems that indirectly influence the person and the microsystem under analysis. The macrosystem embraces the overarching patterns of the micro-, meso, and exosytems contexts of a given culture. Further than the person and the context, the bioecological model comprises time and process. Process expresses the characteristics of person-context interactions over time. Additionally, person and context change over time (Based on ideas of Araújo et al., 2010).

Within the bioecological model, the *process* is deemed to be a principal constraint on human development (Krebs, 2009). Bronfenbrenner and Morris (2006) stated, 'this construct encompasses particular forms of interaction between organism and environment, called proximal processes, that operate over time and are posited as the primary mechanisms producing human development' (p. 795). Proximal processes can generate both positive and negative effects on a developing individual. For example, young talented athletes attending an elite sports academy may thrive in that process or may find the experience traumatic without

the requisite psycho-behavioural attributes and drop-out altogether (Abbott, Button, Pepping, & Collins, 2005). Bronfenbrenner (1995) pointed out, 'what is most revealing about proximal processes, however, is not the gains in predictive power that they provide, but their substantive and theoretical significance as the mechanisms of organism-environment behavioural interaction…' (p. 626). A contextualised historical analysis recognises these proximal processes and their evolution over time, as non-linear idiosyncratic interactions between athlete and environment, which co-constrain skill development. Clearly each individual has the capacity to influence proximal processes through their unique experience and attributes.

The second component of the bioecological model is the *person*, analysed by means of his/her biopsychological characteristics developed during person-environment interactions (Bronfenbrenner & Morris, 1998). As a specific example, (Stattin & Magnusson, 1990) illustrate person-environment interactions by assessing the implications of the biological maturation rate for the developmental process of females. They showed that the behavioural patterns (social adaptation) of post-pubescent girls were related to factors such as age of menarche and association with older, working boys. The authors acknowledge that to understand the role of biological factors on personal development one must also consider mental factors and environmental factors simultaneously.

The third component of the bioecological model is *context*. In human development, context is emphasised as a joint function of characteristics of the person and the environment. It 'encompasses the physical, social, and cultural features of the immediate settings in which human beings live (e.g. family, school, and neighbourhood) as well as the still broader contemporary and historical context in which an individual is born (Moen, 1995, p. 1). Steinberg et al. (1995) recognised the importance of context in analysing parenting style on youngsters' development. They suggest that although authoritative parenting works, in that

adolescents typically fare better when their parents behave this way, it works better in some contexts than others. In certain ecologies, proximal processes outside the control of parents may entirely overwhelm the benefits of authoritative parenting (Steinberg, Darling, & Fletcher, 1995).

Bronfenbrenner conceptualised the environment in terms of nested systems of four levels: microsystem (e.g. family support), mesosystem (e.g. training facility), exosystem (e.g. demography), and macrosystem (.e.g. national historical context) (see Krebs, 2009). These systems can be conceived of as a fitting concentric structure, each containing the other, forming the ecological environment (see Figure 1).

The microsystem is the innermost level at which the developing person is directly involved in activities, roles, and interpersonal relationships with the immediate physical, social and symbolic features of their environment. In a microsystem, the mechanism of proximal process functions to initiate development, but its quality depends on structure and content of the microsystem (Bronfenbrenner & Morris, 1998). To exemplify, interactions between family, school, clubs, and neighbourhood in a particular society will shape the quality of a child's development. Domingues and Gonçalves (2012) demonstrated how the bioecological model can be used to help influence how environmental practices and significant others operate over time to shape sport experiences. In contrasting social and youth football club settings, they observed that sport can be a social mechanism of change which can reduce anti-social, delinquent behaviours and develop close relationships between athletes, coaches and significant others.

The mesosystem is a system of microsystems. When a person transits from one microsystem to another, a mesosystem is created. A mesosystem entails interrelations emerging between two or more settings containing the developing person. In other words,

interactions of a person in one place, (e.g., workplace) are influenced by interaction with other contexts, such as the family (see Bronfenbrenner, 1979; Krebs, 2009).

The exosystem comprises the settings in which the developing person participates, including at least one which does not contain that person, but in which events occur that indirectly influence the person's development (Bronfenbrenner, 1979; Krebs, 2009). Three important exosystems that are likely to indirectly affect the development of children and youth are the parents' workplace, and the family social network, and neighbourhood-community. In line with these ideas, it's worth noting that previous researchers in skill acquisition have reported how certain characteristics of a neighbourhood community, such as population size of a city, may influence expertise acquisition in sport (see Carlson, 1988).

The last level of the nested system is the macrosystem which embraces all the possible linkages amongst microsystems, mesosystems and exosystems. This system was defined by Bronfenbrenner (2005, p. 150) as 'the overarching pattern of micro, meso-, and exosystems characteristics of a given culture, subculture or other broader social context'. As such the macrosystem level includes a range of putative influences (such as political, economic, and sociocultural) upon the developing individual which are undeniably present but rarely considered within the context of motor learning. For example, the broad macrosystem dimension may help us to describe and interpret historical playing styles, cultures and stratifications that characterise certain sports and nations (e.g., New Zealand rugby union, Brazilian football, Australian rules football, Indian cricket, and American basketball).

The final component of the bioecological system is *time*, which permits an analysis of both '…the historical period through which a person lives [and the] …timing of biological and social transitions as they relate to the culturally defined age, role expectations, and opportunities occurring throughout the life course' (Bronfenbrenner, 1995, p. 641). Bronfenbrenner and Morris (1998) classified time into three levels: micro-time, meso-time

and macro-time. These different timescales distinguish between the rapid discontinuities associated with certain momentary proximal processes (micro), the regular periodicity of other interactions over days, weeks and months (meso), in contrast to the more gradual evolution of other episodes that may occur over a lifespan (macro).

3.4 Methodological Foundations of Contextualised Skill Acquisition Research

To summarise so far, contextualised skill acquisition research can be conceived of as a general framework to identify and classify key constraints on an athlete's development. Although many scholars have attempted to apply the bioecological model in new research designs (see Moen et al., 1995), the model has seldom been used to examine skill acquisition processes (Krebs, 2009). It is possible that a lack of familiarity with qualitative research methods has hindered application of Bronfenbrenner's model, particularly in sports science (Mullineaux, Bartlett & Bennett, 2001). However, according to Krebs (2009, p. 123) "Bronfenbrenner's bioecological model offers a possibility to use new research designs to conduct better investigations to assess the athlete's personal attributes". Similarly, Salmon and Timperio (2007) highlighted that more multilevel study designs that incorporate various dimensions (i.e., PPCT) of Bronfenbrenner's model are needed. Gabbard and Krebs (2012) go one step further providing two examples on how the PPCT model might be applied by motor learning researchers. The first suggested line of research concerns environmental influences on fundamental motor skill ability and later physical activity level in children. The second line of enquiry addresses the relationship between motor development and cognitive ability (for further details see Gabbard & Krebs, 2012).

More pertinent to the examples used in this article, Araújo et al. (2010) study exemplifies how to perform qualitative research to investigate the role of ecological constraints on the development of Brazilian footballers. Findings were interpreted and

organised by the nested contextualised systems of Bronfenbrenner's model. For instance, the following constraints identified as *unstructured practice environment* (micro), *clubs* and *family environment* (meso), *birth locations* (exo), and *poverty* (macro) were organised under the scope of the different systems of Bronfenbrenner's model.

However, while Araújo et al. (2010) provide an important contribution on how to address and investigate socio-cultural constraints influencing expertise development, their scope was limited by an empirical design which only included a document analysis form of inquiry. As such, it lacks a comprehensive explanation of how the environment is connected with the individual and vice-versa. This chapter proposes a framework that addresses this issue by relating the different environmental dimensions (e.g. the macrosystem) with individual's lived experiences. To achieve that, I propose an extensive investigation by using other forms of qualitative inquiries such as interview and participant-observation. Thus, contextualised skill acquisition research follows the initial steps taken by Araújo et al. (2010) but extends that work by using the bioecological model to organise prospective findings from different aspects of qualitative research inquiry (see further details on the ethnographic section below). Next, I shall demonstrate how the bioecological model can be applied to identify constraints that affect development of expertise of perceptual motor skills of Brazilian football players.

3.4.1 Researcher as a Tool and as a Bricoleur

As discussed earlier, direct and active involvement of researchers is a key characteristic of interpretivism. As a Brazilian myself, I understand that my personal, cultural, and historical experiences inevitably shaped how I approached fieldwork, interacted with participants, and interpreted findings. Throughout my analysis, my background is acknowledged so that readers understand the dialogic interpretation of the empirical findings emerging from field

notes (participant-observation) collected at different venues, as well as from interviews conducted with players, coaches and other relevant people. To make sense of their understanding of how football players in Brazil acquire relevant perceptual-motor skills, I inductively explored their views and subsequently attempted to develop a theory or patterns of meanings. In doing so, my secondary aim was to develop a methodological and epistemological framework for investigating effects of socio-cultural-historical constraints on skill acquisition.

To achieve this aim, I proceeded as a *bricoleur*. In qualitative research terms, a bricoleur implies a qualitative researcher who can draw coherently from multi-disciplinary perspectives, distinct theoretical and philosophical orientations, and various methods of inquiry in order to interpret a complex phenomenon generated by complex variables, such as those evidenced in socio-cultural studies (see Denzin et al., 2005).

Bricolage supports an adequate multi-method approach that can inform the parameters of interpretive inquiry. In the context of Brazilian football these parameters include music, dancing, social inequalities, education, and even the corruption, each of which are embedded in Brazilian culture. These socio-cultural constraints are important because they might affect skill acquisition within Brazilian football, leading players to infuse their movement coordination processes with unique characteristics such as the idea of playing with *ginga* (sway), flamboyance and flair. Thus, my principal challenge is how to analyse and integrate these constraints that anecdotally have been at the root of the development of the skills of Brazilian football players.

To effectively conduct such an analysis, it was necessary to employ a multi-qualitative approach that offers suitable theoretical and methodological insights to excavate linkages between socio-cultural environmental forces and cultural and corporeal practices of Brazilian footballers. Further, such analyses had to be historically contextualised so that

meaningful interpretations of the acquisition of expertise in football can be made in Brazil. Contextualised skill acquisition research requires a bricolage that intertwines epistemological and methodological concepts from the following: Bronfenbrenner's bioecological model of human development, ethnography, and the coherence theory of truth.

3.4.2 Ethnographic Strategy of Inquiry

In its most basic sense, ethnography refers to a 'sketch' of life in its everyday lived context. Ethnographic strategies are influenced by Paul Willis' (2000) notion of *'the ethnographic imagination'*, which involves the subjectivity and bias of the researchers; practical criticism, rather than being only descriptive; and analysis of lived everyday culture from different sources. As Willis (2000) pointed out '… [the] ethnographic imagination is relevant to the production of all kinds of intellectual work. Non-field-based writing and intellectual work can certainly inform the crafts and methods of ethnography' (p. 113). Thus, under the umbrella of the ethnographic imagination, methods of data collection and analysis consider 'the importance of maintaining a sense of the investigator's history, subjectivity and theoretical positioning as a vital resource for the understanding of, and respect for, those under study' (Willis, 2000, p. 113).

To describe the ethnographic data collection methods I undertook, it is appropriate once more to adopt the first person narrative. I shall highlight the methods employed for my doctoral studies: contextual analysis (conducted prior to field-work in Brazil); participant-observation, and unstructured interviews (conducted during field-work in Brazil). These three methods are complementary and interrelated meaning that they do not follow a one-way linear path in the analysis. Rather, it was a nonlinear, non-sequential research process based on the notion of *reflexivity* described by Dowling (2008). From this view, I had to reflexively move back and forth between the methods, theories and paradigms in order to adjust and in

turn enhance the quality of empirical procedures. Each of these methods are discussed below beginning with contextual analysis which is predominantly informed by written texts (document analysis) regarding the social history of Brazilian football as well as the broader history of the country.

3.4.3 Contextual Analysis

Contextual analysis investigates the socio-cultural context in which a phenomenon has been historically constructed. The historical, economic, political, socio-cultural context in which acquisition of football expertise in Brazilian players occurs is significant for this investigation. Indeed, the *historical contextual analysis* was required to reconstruct a number of socio-cultural and political-economic sites of articulation – that is, how these pressures and contexts interact to shape patterns – within Brazilian football in order to inform the participant observation and interview methods. From a methodological viewpoint, such analysis has been useful in informing what data should be collected in the field. In contrast, given the exploratory nature of the present research, emerging data from fieldwork may also be used to inform what should be added or changed to the contextual analysis as the research proceeds.

3.4.4 Participant Observation

Fieldwork in the form of participant-observations, or sometimes only observations, was performed in São Paulo, Brazil in 2011. Through my contacts as a former player in this region and current football agent, I gained access to a professional football club called Paulista FC, a football pelada in a favela called Vila Ana, and to a football youth team affiliated with São Paulo FC. Regarding the latter, the ethnographic study was primarily based on interviews and informal conversations with coaches, but I had access to the club for

a day to observe one of its team's training. Given the strict conditions of gaining access to the establishment of São Paulo Football Club, I was fortunate and privileged to be able to observe and talk to highly qualified coaches. I also took notes from children playing informal football in parks and streets of my hometown Jundiaí.

The parameters used around the chosen locations for data collection were based on contemporary commentaries regarding the '*History of Brazilian football*', which shows that many successful players emerged from underprivileged suburbs around Brazil. Before they were scouted and sent to a club, they used to make and improvise their own playing fields, whether they were on the street, waste ground, or beach (see Goldblatt, 2006; Taylor, 1998).

To be able to scrutinise the topic and generate rich and relevant evidence, I was prepared to collect data from whatever and whoever provided an opportunity, be it from structured or non-structured settings, professional or non-professional people related to football. However, fieldwork practice was limited by the funding available and also by accessibility in Brazil. In this sense, growing up in the city of Jundiai, province of São Paulo, I was privileged to gain access to football professionals and clubs in the local area that would not have occurred in other regions. There, I started with two key *gatekeepers* (i.e. contacts) who helped to "open the door" to this world by introducing me to the right people. Through a *snowball sampling technique* (i.e. one person indicates other(s)) accessibility was further expanded (see Patton, 2002).

3.4.5 Open-Ended Unstructured Interview

Concurrently with the participant observation fieldwork, a *face to face unstructured open-ended interview technique* was undertaken. In order to maximise the exploration of this topic, I asked open-ended questions, eliciting the views and opinions of participants (see Denzin et al., 2005; Patton, 2002). As an example, when the topic of socio-cultural such as dance,

poverty was brought into the discussion, I then probed: “Tell me about how you perceive the relationship between dance and Brazilian football?” Depending on the response received, I could be more specific and probe further: “Tell me how you perceive the effect of samba on the development of skills of Brazilian football players?” As such the broad macro-level dimension of samba as a socio-cultural constraint in Brazil can be explicitly linked with each individual’s lived skill experiences. Furthermore, as noted above, such topics and lines of questioning were informed by the historical-context analysis performed prior to the field work in Brazil.

Given the open-ended nature of this study, the amount of data collection required to make this study coherent was based on the parameters of ‘*point of saturation’* or the point where new information no longer emerges (Lincoln & Guba, 1985). This is important because, if the amount of data is insufficient, then important information may be missed, providing an incomplete exploration of the topic. On the other hand, if data were oversaturated, then redundant information will be displayed (see Patton, 2002).

3.5 Evaluation in the Form of the Coherence Theory of Truth

Having described some of the methods that can be used to conduct a contextualised skill acquisition research study, my final task is to explain how the quality of the research can be evaluated. Paradigmatic differences that influence the way that research is conducted result in different ways of evaluating the quality and adequacy of research. With regard to the evaluation of the positivist research paradigm, key gauges are validity and reliability. Validity is the degree to which a test or instrument measures what it purports to measure, whereas reliability refers to acceptable agreement between repeated tests made under similar conditions (Thomas & Nelson, 2001). In order to achieve valid and reliable research, positivists adhere to a correspondence theory of truth, by which ‘true statements are those

that are judged to have accurately reflected the qualities and characteristics of what are out there' (Sparkes, 1994, 23). Thus, 'reality' can be understood by the correct application of formalised methods, such as, highly structured questionnaires, essential in ensuring validity and reliability. This application permits the separation of personal opinions from the object of study (Sparkes, 1992).

In qualitative research evaluation criteria are underpinned by the interpretive paradigm, in which validity and reliability are substantively reframed in a subjective epistemology. That is, the researcher is observing and interviewing participants in their natural settings, and given that he or she is the main tool, there are no direct reliability and validity coefficients for the researcher (see Donmoyer, 2008; Miller, 2008).

In order to evaluate research, interpretivists adhere to a coherence theory of truth whereby "the basis of truth or trustworthiness is social agreement; what is judged true or trustworthy is what we can agree, conditioned by time and place, is true or trustworthy" (Sparkes, 1992, p. 30). Within a coherence theory of truth, one event can have many co-existing interpretations so that a richer and broader view of a culture is given (Sparkes, 1994). However, this multiple interpretation might be challenging for researchers studying culture to agree on the most correct interpretation (Sparkes, 1994, p. 14). Such a problem falls within the notion of relativism, which generally challenges the notion of the legitimacy of a single reality or absolute truth. From a relativist researcher's point of view, truth of a phenomenon is subjectively constructed by the writer and ultimately by readers of the research.

Despite these issues, the coherence theory of truth is best equipped for purposes of the interpretive paradigm and qualitative philosophical assumptions of this research approach. In applying the coherent theory of truth as an attempt to ensure the quality and adequacy of research, this approach draws upon an eclectic body of theoretical informants and research strategies, including the concept of contextualisation, ethnographic strategy of inquiry

highlighted by methods of participant observation and interviews, and the bricoleur as the main research instrument.

The credibility of the research can be enhanced by contextualising a phenomenon, in this case Brazilian football, back and forth in time and viewing it from different contexts and perspectives. In my work, I explore and articulate its complex linkages and generate one or multiple-interpretations of the phenomenon. Subsequently, agreements about the truth underlying the development of expertise of Brazilian football players rely on how coherently and consistently I can interpret the findings. However, none of the interpretations are assumed to be value-free or uninfluenced by the writer and reader's assumptions and background.

To further enhance the quality and adequacy of the research under the proposed coherence theory of truth, it will be important to understand a phenomenon from the local people's perspective. Such a negotiation is what Saukko (2005) calls dialogic validity. To achieve this aim, I have read and interpreted various texts, but have also paid close attention to Brazilian football culture as a contested terrain (Hall, 2002). My study draws on an ethnographic strategy of inquiry in which I was not only observing but also participating in the local meaning of life in Brazilian football culture. In addition, through unstructured open-ended interviews, participants' voices and interpretations were dialogically considered (Davis, 2008). In practical terms, useful examples of evaluative criteria for interpretive work are embedded in the questions listed in Table 2 (Denzin, 1989, p. 81).

Additionally, under the scope of coherence theory of truth, this research will ensure credibility by drawing from the notion of reflexivity. According to Dowling (2008), reflexivity can be described as '…qualitative researchers' engagement of continuous examination and explanation of how they have influenced a research project (p. 747)'. With this in mind, throughout the development of this project I have continuously questioned the

methodological decisions made so that, if necessary, I can adjust my research focus without necessarily losing the purpose of it. Under this parameter, the proposed multi-methodological "contextualised skill acquisition research" approach has emerged.

Table 2. Examples of inclusion criteria to be cross-referenced against information generated in interpretive research (Denzin, 1989, p. 81).

	Inclusion criteria
1.	Do they illuminate the phenomenon as lived experience?
2.	Are they based on thickly contextualised materials?
3.	Are they historically and relationally grounded?
4.	Are they processual and interactional?
5.	Do they engulf what is known about the phenomena?
6.	Do they incorporate prior understandings of the phenomena?
7.	Do they cohere and produce understanding?
8.	Are they unfinished or inconclusive?

Finally, in order to make the notion of reflexivity meaningful, it is crucial to take into consideration one of the key aspects of qualitative methods of inquiry: the researcher him/herself. As can be seen, the researcher has a key role in making ontological, epistemological and methodological decisions, and his/her experience and background inevitably influences the analysis and interpretation of the research. The role and background of the researcher has to be acknowledged in advance so readers can interpret the researcher's interpretation of the practice and beliefs of others, and make their own "truth" conclusions. Accordingly, I have reflected, examined, and as highlighted earlier, explained how my Brazilian background and subsequent experience living overseas may influence the way that I will dialogically/dialectically gather and interpret this research.

3.6 Discussion and Conclusions

In this chapter I have proposed a novel research framework (contextualised skill acquisition research) that has considerable potential for analysis of socio-cultural constraints upon skill acquisition. I signalled the need to extend beyond positivist research philosophies in order to investigate unconventional variables in motor learning. I have also justified why the interpretive paradigm and its qualitative research tools are best suited to this purpose. Bronfenbrenner's bioecological model has considerable value to help decide what factors and processes to consider and how best to organise material into suitable levels. To underpin the parameters of this approach, I provided an account of the subjectivist focus of the study, the function of the multi-method approach employed, and a researcher's role as a bricoleur for dialogical interpretations. Finally, I explained the coherence theory of truth as the evaluation criteria employed to maximise the quality or credibility of findings. I also discussed the process of reflexivity, in which researchers need to continuously reflect and analyse all phases of research so that epistemological and methodological adjustment can be made as a means to raise a meaningful interpretation.

Overall, it is proposed that this framework will contribute to the epistemological, theoretical and methodological knowledge across the sub-disciplines of motor learning and sociology. In particular, the approach provides researchers with the tools/rationale to link different systems within which an individual develops. As such an enriched understanding of the individual's lived experiences within the broader socio-cultural, geographical, historical context can be reached. In practical terms, the proposed approach may benefit understanding of processes of skill acquisition, talent identification and athlete development. The limitations, however, suggest that practical implications of the framework may not be directly obvious to teachers, coaches and professionals alike. Indeed to influence either social or cultural influences on the learner is not a simple process due to the extended timescales over

which such variables act. Moreover, results viewed from interpretive paradigms can have multiple interpretations and unlike traditional research in motor learning, results cannot be generalised. It is my hope that this chapter and a recently published version (Uehara et al., 2014) will provoke feedback, discussion and possibly inspire others to consider the contextualised skill acquisition research framework in the future.

CHAPTER 4

A Contextualized History of Brazilian Football: The Road Toward Ginga

4.1 Introduction

Most people would agree that football is the most popular sport in the world and it has a significant cultural presence within Brazilian society (see Goldblatt, 2006; Lever, 1995). Undeniably, football is an integral part of the national identity of Brazil, and fans are infamously passionate about the national football team, but importantly, also very proud of the flamboyant *ginga* football style that has enchanted the world (Bellos, 2002).

The Brazilian football style, as cited in Chapter 1, was first described in 1938 by Gilberto Freyre. However, this unique characteristic only came to be well recognised by the rest of the world through the Brazilian national teams of 1958, 1962, reaching its apogee in 1970 (see Priore & Melo, 2009). Besides crowning Brazil as Fifa World Cup champions for the third time, the 1970 squad captivated viewers globally with a sublime combination of individual skill and group fluidity. Ultimately, from that tournament on, ginga was forever imprinted on the sporting imaginations of fans, both in Brazil and around the world (see Taylor, 1998).

Although it took twenty four more years for Brazil to win its fourth Fifa World Cup in 1994 and subsequently eight more years to win its fifth in 2002, from the 1970's onwards Brazil has always been amongst the favourites to win the World Cup (Toledo, 1994). This expectation was particularly attributed to the squad of 1982, which was technically similar to, or for some critics, even better than the 1970 team (see Taylor, 1998).

However, while most historical accounts of famous Brazilian national teams highlight the combination of individual talent and team plasticity, there is a lack of deeper consideration into how and why a unique style has evolved. Despite the simplicity of the enquiry, the evolution of the ginga style may only be understood if we analyse Brazilian football in the broad context of its nation's history. As Guterman (2009) pointed out, football is not a world apart, but a pure historical construction created as an indivisible part of the

socio-cultural and political-economic life of Brazil. In other words, historical socio-cultural constraints have contributed to the formation of Brazilian football style, and in turn, to the development of skill expertise of Brazilian footballers. In order to understand these issues, this chapter will discuss significant historical influences upon Brazilian football from the 16th century onwards. Key themes of the chapter are based around contextualised socio-cultural and political-economic issues relevant to the development of football skill acquisition in Brazil. As stated in the Introduction Chapter 1, across the world many football writers and observers have identified a unique Brazilian football style, which in Brazil is known as *ginga*.

This chapter aims to provide a contextual framework around which the remaining chapters of this thesis will be constructed. In the initial section, "Genesis of Brazil", I will describe the contemporary history of Brazil and the importance of its immigrants and African slaves to the formation of Brazilian culture. "The Rise of Brazilian Football" will then be described, focusing on the elite British society which exported its technology, capitalism and most importantly, football to Brazil. Next, in the section "Football as a Popular Culture", I will outline how the popularity of football grew radically amongst the masses, despite efforts by the elite to maintain football as a sport for the upper classes only. In "Football, Politics and the Rise of the Champions", I will then explain that as the popularity of football grew, so did the interest of politicians to use football to their political advantage and mass control. Finally, in "Final Remarks: The rise of Ginga via the struggling and glory of the poor" I conclude this chapter by exploring the influences of these socio-cultural and political-economic constraints on the poor and in turn on the perceptual motor skill of Brazilian football players.

It is not my intention to claim that this chapter is a comprehensive history of Brazilian football. However, the chapter covers the core of relevant texts underpinning the topic of this thesis. It is also important to note that there are many different models and paradigms (e.g.,

deconstructivism, reconstructivism, constructivism) in writing the history of sport (see Booth, 2005). My aim is to primarily write this chapter under the view of reconstructivism. However, I am aware that I may have crossed the boundaries amongst historical research models and paradigms. As Booth (2005, p. 21) pointed out, some historians do "transgress boundaries" and work across different paradigms and models in individual texts. Thus, for the "motor learning" purpose which is core to this thesis, I believe that this chapter captures the essence of the historical accounts of Brazilian football in order to inform the remaining chapters of this thesis.

Information obtained for this chapter was retrieved from: a) texts sourced from the University of Otago Library and Databases, the Internet, and partly from books and articles from Brazil which I personally translated, paraphrased and/or directly quoted from Portuguese to English; b) from an ethnographic study which I performed in Brazil during the period between January and February of 2011(see further detail on Chapter 3 Methodology).

4.2 The Genesis of Brazil

Brazil has a long history of cultural migration, with people coming from many different parts of the world bringing their traditions, values and culture. Perhaps the most significant example is when people from Europe, the "Old World", crossed the Atlantic to conquer the lands of the native indigenous people of South America. These were lands that the Europeans labelled as the "New World" (Eakin, 1997, p. 7). This was the beginning of modern Brazilian history.

In the sixteenth century, Europe was a powerful continent with some of its small nations, such as Portugal, embarking on colonial conquests of discovery and empowerment. One of Portugal's aims was to expand Catholicism as well as increase its wealth and power by trading with Asian and African continents (see Eakin, 1997). However, in one of its

journeys towards Africa, a Portuguese fleet lost its way, crossed the Atlantic Ocean and ended up reaching South America. More precisely, on the 22nd of April, 1500, Brazil was accidentally discovered by the Portuguese commander Pedro Alvares Cabral, who along with his convoy of thirteen ships containing 1200 persons, anchored in the waters of a sheltered harbour, now Porto Seguro, one of the cities of the State of Bahia (see Skidmore, 1999). Soon, under the terms of the Treaty of Tordesillas[9], the Portuguese Empire declared themselves the owners of the new land.

While this new land was a new territory for the Portuguese, it had been for centuries the land of native people, the *Indians* or *Índios* in the Portuguese Language. There is no general consensus about the precise population of the Índios when the Portuguese arrived, but there are estimates ranging between 500,000 and 2 million (Skidmore, 1999). Within the Índios, there were hundreds of different tribes separated according to their respective languages and culture (see Ribeiro, 2005). Although it was not particularly obvious in the eyes of the Europeans, at least at first glance, the Índios had a socio-economic system in place where trading between them was well developed (see Levine, 1999). However, unlike the majority of other Índio communities in Latin America encountered by the Spanish, the Brazilian Índio economy was not based on stable agriculture and therefore, they were nomadic, living in temporary villages as they were constantly moving in search for food, be it by hunting or by gathering fruit or berries from trees (Levine & Crocitti, 1999). Warfare was also a common practice amongst them, and on the coast the most successful tribe of all was the Tupi Guarani Tribe. They were the largest group and "the most belligerent, engaging in warfare…" (Levine, 1999, p. 31). They were tough, fierce, looked dangerous, and practiced cannibalism against their prisoners (see Levine 1999a; Skidmore, 1999).

[9] "In 1494, with the Pope's blessing, Spain and Portugal signed the Treaty of Tordesillas, which drew an imaginary line far out into the Atlantic. With a few exceptions, the Portuguese would lay claim to colonial territories to the east, and Spain to the west, of the line" (Eakin, 1998, p. 14).

Despite such a threat, there were no initial objections or conflicts on the first contact between the Índios and the Portuguese (see Priore & Venancio, 2010). Under such peaceful conditions, a business relationship based on the model of the *feitorias* (fortified trading posts) was established between Europeans and Índios and the first commodity to be traded was *pau-brasil* (brazilwood) (see Smith & Vinhosa, 2002). Such a system suited the interests of the Portuguese Emperor which was to establish another set of profitable trading posts like the ones previously established in Africa and Asia (see Smith et al., 2002). In reality, the Portuguese empire could not afford to colonise the new territory, as Portugal was just a small nation with very limited resources (Levine & Crocitti, 1999).

After three decades, however, the feitoria system started to collapse due to threats by France and Spain who were trying to claim territory in Brazil by incursions; and due to the increased demand for more trading to overcome the decrease of trading activities in the Indian Ocean (Skidmore, 1999). The Portuguese crown had to consider its position towards Brazil, although as alluded to previously, Portugal did not want to invest directly in colonising Brazil due to its restricted resources (see Skidmore, 1999). The solution was then to establish "a semi-feudal system of hereditary land grants or *captaincies*" (Skidmore, 1999, p. 10). Captaincies, or in Portuguese *capitanias*, consisted of dividing Brazil into fifteen lands and "distributing them among twelve donataries, most of whom were wealthy Portuguese aristocrats" (Smith et al., 2002, p. 5). The aim was to establish communities, cultivate the land – mainly with sugarcane plantations and protect their investment.

As the economic system changed, so did the relationship between Índios and Portuguese, in which the latter began to capture and torture the former for forced labour in the sugarcane farms. Obviously, since living in just one location and under forced labour was not something that Índios had experienced before, neither was something that they were prepared to do without fighting. For centuries to come, they resisted their imprisonment in all

forms, including escaping or invading captaincies to destroy plantations and kill the foreigners. This conflict, combined with the unusual, infectious diseases brought by the Europeans, resulted in the deaths of millions of Índios. Those who escaped and survived moved towards the dense forest, making it difficult to be followed by the Europeans (see Eakin, 1997).

With the exception of São Vincente and Pernambuco, however, where the soil was suitable and used wisely for the cultivation of sugar cane, the captaincies system failed to the point of jeopardizing the sovereignty of Portugal in Brazil. Such a fiasco was "due mostly to lack of interest from the proprietors faced with the daunting task of paying settlement as well as for the immense risk of being killed by diseases such as malaria or by constant Índios' attacks" (Smith et al., 2002, p. 6).

To assure royal authority, King João III appointed Tome de Souza as the resident governor-general of the colony. He arrived in Brazil in March of 1549 with more than one thousand soldiers. Salvador in Bahia was founded as the capital of the colony and the captaincies system was abandoned, meaning that the donataries "were required to give up their exclusive power in relation to the collection of taxes, administration of justice and defence of territory" (Smith et al., 2002, p. 71).

Despite the regulatory changes, the captaincies system left its legacy in the history of Brazil, since it was through this model that systematic economic inequality emerged in the country. In other words, only a small number of people possessed immense amounts of land and the majority remained poor. As the economy grew, the few rich people, the landowners, became richer and the poor majority had to live under the economic power of the rich (see Baer, 2008; Hess & Matta, 1995). This power inequality between the rich and poor could be seen with the boom of the sugar industry which became the main source of international commerce in the seventeenth and eighteenth centuries. In addition, gold was finally found in

the 1690s and as with sugar, it became another major source of economic power for the rich (see Baer, 2008).

As the Brazilian sugar cane industry successfully grew, so too did the demand for labour. At this stage, the Portuguese realised that the Índios, with their free way of living, would never accept the conditions of slaves and would keep fiercely resisting. In the 1570s "…Brazilian agricultural procedures stopped relying on raiding parties to capture Índios to forced labor; they began instead to import shiploads of Africans from their African trading posts" (Levine, 1999, p. 42). Portugal was already an accomplished expert in the trading of Africans to Europe as slaves, starting from the 1400s and so, bringing them to Brazil was never difficult (see Smith et al., 2002). It has been estimated that more than four million African slaves were captured and taken to Brazil during the period of Portuguese Conquest. These slaves were forced to traverse the Atlantic Ocean in *black ships*, where they were subjected to the most inhumane of circumstances and deadly diseases (see Câmara, 2009).

On dry land, the slaves' ordeal continued. They were sold at auctions and distributed to forced labour in different parts of Brazil, especially to the Northeast for the sugar plantations and the Centre South to Minas Gerais for the extraction of gold and diamonds (Câmara, 2009). As did the *Índios*, many African slaves escaped into the forest and formed communities known as *quilombos* with the Kingdom of Palmares in Alogoas being recorded as the largest of them with 20,000 inhabitants at one time (Câmara, 2009). After many attacks from government soldiers, Palmares was destroyed in 1695 (Smith et al., 2002). In centuries to come, many other quilombos were formed in different regions of Brazil and until the abolition of slavery in 1888, African slaves kept fighting for their freedom.

In comparison with native Índios, however, African slaves were more manageable and physically stronger (Smith et al., 2002), meaning in practical terms that the labour work of one African slave was equivalent of the labour work of four Índios (Câmara, 2009).

However, in spite of such a good level of fitness, the working life span of an African slave was on average seven years. They were not provided with enough food, worked more than fifteen hours a day, and did not have any form of medical assistance. Their death was not considered problematic as they were easily replaced. Indeed, they were mere objects due to their abundance (see Câmara, 2009).

To this point, Brazil was an important source of wealth for the Portuguese Empire which for more than three centuries exploited its colony. However, on the 7th of September, 1822, Brazil became an independent country and established its own monarch with Dom Pedro I as the first King of Brazil. Paradoxically, Dom Pedro I was the son of the King of Portugal (see MacLachlan, 2003).

In the 1830s coffee became the most profitable Brazilian product, fuelling Brazil's economy for the next 140 years (Skidmore, 1999). Subsequently, power shifted from the lords of sugar cane to the barons of coffee, and many of the sugar cane slaves, especially from the northern region of Brazil, were then shifted, in profitable commercial transactions, to the centre-south region which accommodated the biggest plantations of coffee (see Skidmore, 1999).

The coffee boom led to a rapid rise of coffee production which in turn led to a high demand for labour, which could not be matched anymore by the work of African slaves. In other words, with the end of the slave trade in 1850, the shortage of labour had increased dramatically, leading the Brazilian government to legalise working consent for European immigrants, millions of whom had settled in Brazil by the end of the eighteenth century (see Wolford, 2010).

By the end of the 19th century, the history of Brazil took a different socio-political direction with the abolition of slavery in 1888, then with establishment of the first Republic in 1889. However, the economy itself remained essentially agrarian, which inevitably

expanded the political power of the elite landlords, especially of the barons of coffee in São Paulo, due to their affluent economic status (see Levine, 1999). Thus, while this new political system favoured former slaveholders, many freed slaves struggled with the changes. "To many, freedom meant the absence of work and little else. As they drifted back to the plantations, they found a mixed, even hostile reception" (MacLachlan, 2003. p. 40).

The problem centres on the fact that former slaves had been denied access to education throughout their lives and even after the abolition of slavery, they never received any form of compensation from the government. Many decided to move on to the cities with dreams of re-starting their lives after more than three centuries of suffering. However, as the former slaves lacked qualifications, it was difficult for them to find jobs and when they were able to find work it was underpaid with bad working conditions. Such circumstances were not only the reality of the former slaves, but also of any poor person, including underqualified whites and mullatos (see Smith et al., 2002). Without jobs, a place to stay, or money, the solution was to move to the outskirts of the cities, forming what today have become known as *'favelas'* (shantytowns). The growth of favelas intensified in the 1940s when hundreds of thousands of Brazilian migrants from rural regions, especially from the Northeast, began shifting to the cities with dreams of a better life (see Eakin, 1997). In spite of the hardships they had faced in the past, black people prevailed to become major figures in the formation of Brazilian socio-culture, including football.

4.3 The Rise of Football in Brazil

During the nineteenth century, Brazil exported large amounts of coffee and subsequently the economy was relatively strong on a global scale. The centre-south region was comparatively privileged, particularly the State of São Paulo, which accommodated the largest plantations due to its suitable climate and fertile land (see Skidmore, 1999). As the production of coffee

grew, the need for more railways to transport the product from the interior to the ports was vital. Thus, in the second half of the nineteenth century the Brazilian government endorsed the construction of railroads by offering financial "subsidies and guaranteed rates of return" (Baer, 2008, p. 23). Such an offer was very attractive to foreign investors, especially for those from England which by then was the economic power house of the world and particularly adept at railway construction. With their investment, a huge development could be seen in the railroads[10] in the country, which grew from 1290 km in 1864 to 9660 km in 1889 (see Smith et al., 2002).

As a result of Brazilian prosperity, labouring working opportunities increased considerably, which then attracted millions of working class European immigrants, especially Italians, who in conjunction with Brazilian migrants, made the centre-south the most populated region in Brazil (see Levine & Crocitti, 1999). The city of São Paulo was growing fast, requiring large infrastructural transformations. Once again, the British[11] recognised the opportunity and invested in the sectors of gas, sewerage, electricity and transportation (Guterman, 2009). Subsequently, along with British capital investment and technology came other aspects of its popular culture, including football.

While association football was first reported through games played between British sailors on the coast of Brazil at the end of the nineteenth century, there is a general historical consensus that the first and most notorious pioneer of football in Brazil was Charles Miller (see Miller & Crolley, 2007; Priore et al., 2009). The son of British parents, Charles William

[10] The most prominent line linked São Paulo to Santos to meet the needs of coffee exportation. By the end of the nineteenth century, Brazil controlled 80% of the world market (see Smith et al., 2002).

[11] Although the British were major investors in Brazil in the nineteenth century, the British community was relatively small. There were groups of a maximum of 300 people working for British companies on specific jobs. At this time it was rare to see any poor British migrants. The poorer migrants went to the USA and only the qualified migrants came to Brazil. This was the case of Charles Miller's father, a Scottish engineer who came to work for the São Paulo Railway (Guterman, 2009).

Miller was born in São Paulo in 1874, and like many other children of British parentage, he was sent to England to study when he was nine years old, in 1884. For nearly ten years, Charles studied at a college in the region of Southampton where he discovered and learned football. Back in Brazil in 1894 with a couple of footballs and the rules of the game, Charles introduced the game to his British community in São Paulo, undoubtedly unaware that he was planting the seeds of Brazilian football (see Mason, 1995).

Although Miller is generally referred to as the main pioneer of Brazilian football, there are others who contributed significantly to the introduction of the game. For instance, Oscar Cox learned football in Switzerland and on his way back to Brazil in 1897, like Miller, brought some balls and football rules and introduced the game to the elite society in Rio de Janeiro. Similarly, Zuza Ferreira returned from England and introduced football in Salvador in 1901. In 1903 it was Guilherme de Aquino Fonseca, a former student of Hooton Town School in England, who returned home and introduced the game in Recife. A year later in Belo Horizonte, Victor Serpa was seeking players to play the game he had learnt in Switzerland. In addition, coming back from Liverpool in 1907, Joaquim Moreira Alves dos Santos organised the first football match in São Luis do Maranhão (see Priore et al., 2009; Mason, 1995).

Perhaps many other regions in Brazil may have had their own kind of football pioneer, but what is interesting to note is that, like Miller, they all come from rich families, the majority with an English background. Thus, it can be said that Brazilian football diffused mainly from the elite British society which was soon joined by the coffee oligarchy. This was the case of the Prado family from São Paulo, one the richest families in Brazil at the time, whose business involved coffee and railroads. Through the influence of this family, a cycle track was built in 1892 and transformed into the first football stadium in Brazil in 1901 (see Guterman, 2009). Gradually teams and clubs were formed amongst the elite of major cities.

In 1895 in São Paulo, Miller promoted the first football game in the country between employees of a Gas Company and São Paulo Railway. Miller's team, the Railway, won by 4-2 (Franco, 2007).

By the end of the eighteenth century, there were five teams practising football in São Paulo: São Paulo Athletic Club, Mackenzie College Athletic Association, Sport Club Germania, Sport Club International, and Club Athletic Paulistano. With the exception of the first club, which was founded in 1888 by the English community for social events and practising cricket, all others were founded primarily for football during the second half of the 1890s (Priore et al., 2009). In Rio de Janeiro, it took three years for Cox to set up the first football team, which was based at a cricket club. But soon after, in 1902, he helped to established Rio's first football club, Fluminense (Lopes, 1994).

In the same decade, many other clubs were founded within the elite of Rio and São Paulo, but all were established under the English imported amateur spirit where values of chivalry and fair-play were paramount to their existence (see Guterman, 2009). For the key pioneers, football games were like outdoor parties played for the pleasure of camaraderie, a spectacle of colonial class, status, and racial whiteness. Thus, it was restricted to people of a similar social and racial background (see Priore et al., 2009; Franco, 2007). In this sense, the elite were more than just proclaiming moral values as if it was part of their status, but they could also distinguish themselves from what they saw as the customs of the uneducated immigrants and former slaves (Guterman, 2009).

With this in mind, the already existent racist ideology in Brazil was reinforced in that the poor, who were mostly blacks and mullatos[12], were not welcome to the game of football (see Priore et al., 2009). However, the elite could not maintain the imposed segregation in

[12] "Mullatos were the product of white fathers and African mothers. In the seventeenth century there was a tendency to refer to all people of mixed race as pardos or ('greys')" (Smith et al., 2002, p. 29).

football for long and in less than two decades, football became one of the most popular cultures of Brazil.

4.4 Football as Popular Culture

Despite the initial resistance of the elite, football was soon diffusing amongst the masses. In the suburbs, more and more sandlot games could be seen played by barefoot players who kicked stocking balls and improvised goal posts with all sorts of material (Lopes, 1997). In the suburbs, teams and clubs were formed. For instance, from 1903 onwards, railroad workers formed their own teams and organised their own tournaments (Guterman, 2009). At this point, the notion of pelada (i.e., pick up, self-organised games) started, influencing therefore the development of perceptual-motor skills of Brazilian players (see further details about pelada in Chapter 5). Interestingly, the masses also started to organise themselves better in non-football related matters, demanding better working conditions. From this point of view, the popularisation of football was not seen as bad by the aristocracy, but as a form of social appeasement to control the dissatisfaction of the workers. "The British knew well what it meant –after all, football was used exactly for this purpose in the mid-nineteenth century in England" (Guterman, 2009, p. 36).

By the end of 1906, there were more than thirty clubs in Rio de Janeiro (Pereira, 2000). São Paulo was no different and according to Mazzoni (1950), in around 1908, workers teams started playing on Sundays in the improvised fields of the immense area called "Varzea do Carmo". This legacy has been maintained and today any amateur football played around the suburbs is called "varzea" football or in Portuguese *futebol de varzea* (Guterman, 2009, p. 36).

It is hard to explain why football became so popular in Brazil given that other sports such as rowing, horse-racing, and cricket were never so attractive to the lower social class

(see Marzano & Melo, 2010) Perhaps the predominant characteristics of those three sports themselves were a sufficient obstacle to their popularisation. In contrast, football may be different in the sense that it is has the power to create strong bonds within the masses because it is a simple dynamic collective game, regulated by a very simple set of rules; it does not demand any special physical/biological attributes such as height, weight and to a certain extent age; and it is financially accessible to anyone (see Priore et al., 2009).

From a different point of view, Mason (1995) argues that the popularisation of football in Brazil is due to the passion that it generates, which in turn may be a reflection of the democratic values that rule the game: the winning factors are based on quality and good performance rather than on skin colour and social position. As Mason (1995, p. 123) explains:

> Football produced this passion partly because it was 'democratic'. It was not exclusive to a society in which people got on because of their family or because they knew someone with influence or even by Presidential decree. In football, only the performance counted. A man's rise or fall depended on competence alone and not on personal relationships in a country where 'the good ones have it all from birth. The footballer, like the samba dancer, did not get it all at birth and did not do much studying on the way either'…

Possibly, a more plausible stimulus for the popularisation of football in Brazil was the companies and factories which started to establish teams amongst themselves. As in many other countries in Europe at that time, the focus was on disciplinary behaviour, as explained by Lopes (1997):

> That is, adopting football as a pedagogical and disciplinary technique for 'total institutions'; a technique invented by elite English boarding-schools but applicable to disciplining (morally and symbolically shaping) working-class youth in various types of institutions (see Bourdieu, 1980b). Thus, it was not only schools (catering to the elite in a country with little schooling available to the general population) but also companies which helped to disseminate both the playing of, and direct access to, football among the working classes. (p. 59)

In Brazil, The Bangu Athletic Club was the first *company club* to be founded in 1904 by a British company called Compania Progresso Industrial, in Rio de Janeiro. This club gained

notoriety for being the first within the elite to accept labourers from the lower classes as well as being the first to have professional characteristics (see Guterman, 2009). While their main focus may had been on enjoyment and socialisation, as was the aim of any elite football group in Brazil, they soon realised that football could bring other benefits, such as prestige and the disciplinary ethic as explained above.

Arguably, the acceptance of the working class into the team, regardless of social status or skin colour, was more due to necessity rather than any democratic principles exerted by the employers. On the formation of many clubs, there were often not enough players to form two teams, so labourers, including black and mullato people, were invited to join in (see Guterman, 2009; Lopes, 1997). For those who accepted, they had the advantage of working less and in lighter duties so they could have more time to spend training; besides they had a better chance of remaining employed. All of these perks can be seen as a form of compensation, the equivalent of a salary in the professional world today. This was the beginning of the decline of amateur ethos.

As the number of working class players increased on the team, so did the number of working class supporters which "grew tremendously when Bangu was incorporated into the Rio de Janeiro football league, the first division in the Carioca Championship. The team was soon more famous than the company itself and ended up serving as a positive marketing image for the latter" (Lopes, 1997, p. 58).

Other companies followed suit, offering their workers/players different forms of compensation, including payment in the form of animals[13] in the case of victory (see Guterman, 2009). The idea of winning at all costs rather than playing chiefly for chivalry started to strengthen. To be able to win though, it was necessary to have the best players on the team, even if it meant having players from the lower class of the society. As a result, 1915

[13] Animal in Portuguese can be translated as *bicho*, which is the term used for the financial bonus received after winning matches in today's Brazilian football (see Guterman, 2009).

was the last year that a team exclusively made up of English players, be it in São Paulo or Rio de Janeiro, was seen playing together (Guterman, 2009). The inclusiveness of players from the masses implies changing in the style of playing as their football skills were acquired under unconventional ways (see further details on this issue in Chapter 5 and 6).

In the beginning of the 1920s, the idea to professionalise football in Brazil intensified (see Priore et al., 2009). However, until it happened in 1933, the elite fought in many different ways to maintain their amateur ideology. In 1913, for example, there was a breach in the São Paulo State League Organisation due to differences between groups. While one group was advocating the acceptance of anyone into the league regardless of social status, the other group demanded that only teams formed by the elite be able to participate in the league. The second group temporarily won the case and founded the Association Paulista of Sports Athletics, which was the beginning of today's Federation Paulista Football (see Franco, 2007). However, the participation of working class players had gained tremendous impetus in the first two decades of the nineteenth century, making it impossible for the elite to sustain their hegemony (see Lopes, 1997).

Within this context of *worker-players*, Corinthians Athletic Club is another club that stood out in the history of Brazilian football. Founded in 1910, this team came to prominence for similar and different reasons to Bangu A.C. The difference was that Corinthians was founded by workers of the suburb of Bom Retiro in São Paulo, not by owners of a company. Therefore, no major sponsorship was available. On the other hand, the similarity between the two clubs lies in their democratic values, where the masses were accepted in the teams. In fact, Corinthians' statute stipulated that the club would be a place open to everyone, regardless of religion, politics, or nationality (Guterman, 2009).

Indeed, Bom Retiro, the suburb where Corinthians was formed, was a place which accommodated European immigrants of lower socio-economic status of various nationalities

such as Italian, Spanish, Polish, German, and Portuguese. Rather than working in rural areas, these immigrants settled close to the city where opportunities of employment and business were increasing thanks to the city's growth. Many of them worked for the railroad companies or were self-employed as artisans and with their support, Corinthians survived and today is one of the most popular football teams in Brazil (see Goulart, 2010).

Thus, the formation of the Bangu and Corinthians clubs represented the first stage of the democratisation of football in Brazil, especially by welcoming blacks and mulattos into the sport. Their participation began to influence how the game was played, making it less pragmatic, towards a more artistic way of playing (see Lopes, 1997). Indeed, the first Brazilian football national hero was Arthur Friedenreich, a mullato, son of a German tradesman and a former slave. *Fred* was born in São Paulo in 1894 and thanks to his father's wealth had access to education. He studied until the age of sixteen in Mackenzie College, São Paulo, where he discovered football and showed his natural ability for the sport. From Mackenzie he went to play for Germania Football Club thanks to the background, financial power, and insistence of his father who believed in his son's football capabilities (see Guterman, 2009).

In 1919, Fred played for the Brazilian national team in the South American Championship. He scored the goal that gave Brazil its first international title (Filho, 2003). This victory was significant because the game was played against Uruguay, the strongest football team in the world at the time. The game itself was very dramatic ending at nil-nil at the end of normal time, requiring two extra times, since at that time there was no such thing as a penalty shootout. As fate would have it, in the thirteenth minute of the first half of the second extra time, Fred scored his historic goal. As Guterman (2009) pointed out, Fred became a national hero, but most importantly, from this time on, Brazil noted that its non-white people could also make an important contribution.

With this context in mind, since the beginning of the history of Brazilian football until today, the major football icons have been black and mullatos. For instance, Leonidas became a super star in the 1940s. In the 1950s it was Didi. Then in the 1960/70s were Garrincha and Pelé. More recently, Romário and Ronaldinho have enchanted the world with their high level of perceptual motor skills. Interestingly, besides their similar poor background, they all have been engaged in other socio-cultural activities such as samba and capoeira. Hence, it can be argued that these extra socio-cultural activities have influenced their style of playing football, the ginga style (in the chapters to follow, evidence on this issue will be presented and discussed).

4.5 Football, Politics and the Rise of the Champions

From the beginning of the 1930s, aided by the written coverage of journalist Mario Filho and with the game being transmitted on the radio, fans started to increasingly identify with their respective clubs (Franco, 2007). The Brazilian national team became a source of national pride, raising a sense of patriotism and unification across sectors of society (see Franco, 2007). In highlighting this issue, an important figure acting toward national unification was the President Getulio Vargas, one of the most popular civilian presidents in the history of Brazil. In 1930 Getulio Vargas took power by military coup and his mission was to take the country through a "national reconstruction" (Smith et al., 2002, p. 41). The plan was to break down the monopoly of the oligarchs, and at the same time rebuild the country, which in his view was only possible through the process of industrialisation (see Smith et al., 2002).

Getulio Vargas aimed to develop a country with a national identity of its own, and unlike his predecessors who had privileged the purity of the white race, Getulio saw the importance of the masses in this process. Therefore, his government developed various socio-economic plans in favour of the masses. For instance, the minimum wage was established,

the samba schools received a large amount of funding, and football officially become professional in 1933 (see Skidmore, 1999). Under this scenario, Vargas led the first Brazilian government which extensively used football as a way of influencing the masses towards his political interests (see Drumond, 2008).

In the case of the professionalization of football, it not only functioned as a means of increasing the support of the masses in favour of the government, but also as a way of presenting Brazil as a racially democratic country where the rights of all citizens, including the black and poor people, were respected (Guterman, 2009). In other words, the socio-political-economic position of black people was extremely difficult in the first years of the Republic due to a lack of money, qualifications and fundamentally due to their skin colour (Priore et al., 2009). "Besides poverty, they had to face a series of prejudices crystallized in institutions and laws, made to stigmatize them as sub-citizens, people without a voice in Brazilian society" (Priore et al., 2010, p. 220). With Vargas in power, new laws were established reinforcing the human rights for all Brazilians, especially for the poor masses (see Câmara, 2009). Thus, from this perspective, Vargas undeniably helped to increase the sense of racial democracy in Brazil. Regarding football, such democratisation reinforced the establishment of Brazilian football style as the socio lower class players had more power and opportunities to express their flamboyant skills, once again, acquired through unconventional means (see Guterman, 2009).

However, while Vargas tried to content the masses with his socio-economic programmes, he failed to fight against social inequalities as he avoided getting involved with the problem of land reform in his so called plan of national reconstruction (Smith et al.,

2002). Thus, despite his achievements in modernising Brazil through industrialisation, Vargas failed to help the poor to effectively get out of poverty[14].

Over the next half century or so, while Brazil went through an exponential process of urbanisation, industrialisation, and economic growth, drastic bouts of inflation and recession combined with a corrupt political system, restrained the financial stability of the country (see Smith et al., 2002). More recently, however, inflation has been kept under control and the economy has grown considerably (see Baer, 2008). Nonetheless, not much has been changed in favour of those living in poverty who have historically been relegated to subsistence conditions whereby unemployment, illiteracy, health care, hunger, and so on, have to be overcome on a daily basis (see J. Rocha, 2000). Thus, under constant socio-political-economical disturbances, many governments have used all means available in an attempt to consolidate their political positions. As explained below, football is one of them.

Historically, socio-economic inequality in Brazil has been amongst the greatest in the world, mainly due to the colonial legacy of corruption and political instability (see Eakin, 1997; Smith et al., 2002). However, as Hess et al. (1995) pointed out, "Corruption and political instability are not just a product of a colonial legacy or neo-colonial economics; they are also products of a continued reproduction of practices, values, and institutions in the informal institutions of everyday life" (p. 21). Arguably, it can be said that the normalcy of corruption has been ingrained into the masses and has almost become part of Brazilians' daily lives. As such, the mentality is to "take advantage of a situation whenever you can" on the reasoning that, if they (politicians) do it, then one has to do it too to be able to compete and survive. In this sense, being sneaky in Brazil is almost synonymous with being smart and clever. Such attributes in Portuguese can be summarised into one word: malandragem, which

[14] The socio-economic characteristics of Brazilian society have never changed, despite the progress that the country went through. Indeed, history shows that up to now none of the elected Brazilian Presidents were capable of directing Brazil towards an egalitarian society.

by all means highlights the perceptual-motor skills of Brazilian football players (see Chapter 6 for further details on malandragem).

After fifteen years, Vargas relinquished power in 1945 in the same way as he acquired it, that is, by military force. However, in 1950 his popularity was very high again, so in that year he came back to power for his second mandate as president. Four years later, the military was again planning to take Vargas out of power, but this time he preferred to die rather than have to go through the same humiliation twice. On the 24th of August of 1954, he shot himself (see Smith et al., 2002).

From Vargas' first mandate until 1970, the year that *ginga* made a profound impact worldwide, Brazil was democratically governed by Eurico Gaspar Dutra, Getulio Vargas again (now under democratic standards), Juscelino Kubitschek, Janio Quadros, Joao Goulart, and then by the military dictatorships of Castelo Branco, Artur da Costa e Silva, and finally of Garrastazu Medici. From Medici onwards, Brazil had two more military governments until a democratic political system was re-established in 1985 and maintained until today.

Regardless of the regime, however, leading authorities recognised how powerful a popular phenomenon like football can be and thus, they wanted to be seen as if they profoundly share the biggest passion of the nation. To this end, the former President Luiz Inácio Lula da Silva is the most current example of authority that has used football as political instrument. Coming from a working class background, President Lula made sure that all Brazilians knew that he is a fanatical supporter of the football club Corinthians, one of the most popular clubs, represented primarily by working class supporters. He is also a passionate fan of the Brazilian national team and as such, at every available opportunity he appears in the media talking about football. Not ironically, despite all the accusations of his involvement with corruption, he managed to win two mandates and led his predecessor (the

current President Dilma Rousseff) to win the last two, the first in 2010 and the most recent one in 2014.

As a Brazilian who loves football, I have no doubt that many politicians have genuinely expressed their passion for football, but as evidenced, many have used football as a political instrument to gain credit with the mass. Paradoxically, while football continues to be one of Brazil's main sources of discussion, little attention has been paid to more important issues such as unemployment, inequality, injustice, education, and poverty. On this note, many scholars from a Marxist orientated perspective have criticised football and sport in general. For instance, Levine (1982) pointed out, football is not only the opium of the Brazilian people as it also serves as an instrument of the dominant class to manipulate the masses. It is a form of disguise that cloaks the misery and misfortunes of poverty through the jubilation of winning a domestic or international championship. For Caldas (1994) the problem is not football itself, but the governments who tend to use any form of social phenomenon of great popular resonance to manipulate the masses for their own political advantage. In Chomsky's view, sport plays a huge role in de-politicising people[15].

[15] "…in our society, we have things that you might use your intelligence on, like politics, but people really can't get involved in them in a very serious way – so what they do is they put their minds into other things, such as sports. You are trained to be obedient; you don't have an interesting job; there's no work around for you that's creative; in the cultural environment you're a passive observer of usually pretty tawdry stuff; political and social life are out of your range, they're in the hands of the rich folk. So what's left? Well, one thing that's left is sport – so you put a lot of the intelligence and the thought and the self-confidence into that. And I suppose that's also one of the basic functions it serves in the society in general: it occupies the population, and keeps them from trying to get involved with things that really matter. In fact, I presume that's part of the reason why spectator sports are supported to the degree they are by the dominant institution. And spectator sports also have other useful functions too. For one thing, they're a great way to build up chauvinism – you start by developing these totally irrational loyalties early in life, and they translate very nicely to other areas. [Thus],…the point is, this sense of irrational loyalty to some sort of meaningless community is training for subordination to power, and for chauvinism. (Chomsky, 2002, pp. 99-100)

Although it is a very interesting issue, this discussion is certainly too complex to be analysed in a simplistic hypothetical way. More pertinent to this chapter, therefore, are the historical accounts substantiated by socio-cultural and political-economic dynamics that have positively influenced the acquirement of football skills of Brazilian players and in turn shaped the origin of Brazilian football style and its efficacy to win titles. As a matter of fact, after many setbacks and frustrations, Brazil finally won its first World Cup in 1958, and subsequently four more times in 1962, 1970, 1994, and 2002.

4.6 Final Remarks

After many triumphs, Brazil secured "…the respect of the global sporting community and fostered its citizens' pride in their nation" (Lever, 1995, pp. 7-8). However, while football was a symbol of Brazilian success and a source of pride for the people, we cannot say the same about the socio-economic situation of the country. Regardless of who was in power, the economic situation of Brazil had never changed in favour of the masses and the financial gap separating the rich and the poor has always been large (see Passarinho, 2011). From time to time, there were sporadic economic improvements that had benefited the working class as evidenced during the modernization programmes of Getulio Vargas, Juscelino Kubitschek, and the military dictatorships (see Smith et al., 2002). However, the high cost of investment in modernization led to a high level of inflation, which in turn led everything to where it was, the poor being poorer and the rich getting richer. Clearly, this ruinous cycle for the masses was not a problem for the elite who profited from inflation through investments.

From 1964 to 2000, for example, the Brazilian economy grew considerably, bringing a wage adjustment that was not undervalued. It brought an increase in purchasing power, especially for the middle and upper classes. Because of that, the quality of life improved in many different ways for the people living in the cities. For instance, the number of homes

with access to piped water increased from 16% in 1950 to 70% in 1990. The proportion of houses equipped with electrical lighting rose from 25% in 1950 to 90% in 1990. The number of television sets per family also grew from 24% in 1970 to over 70% in 1990. Finally, the number of families owning cars went from 9% in 1970 to 40% in 1994 (Smith et al., 2002).

However, one cannot let these numbers be used to mask the reality of life for the lower classes in Brazil. Economic inequality, which has always been a problem since the beginning of the formation of the country, actually increased in this period, making Brazil one of the most unequal societies in the world (see Eakin, 1997). The major problem of such an unequal society is that as the rich get even richer and the poor keep sinking deeper into poverty, the level of criminality increases, and no one ends up living well. Just in the 1990s, for example, 369,101 people were murdered in Brazil, placing this country as one of the most violent countries in the world (see G1, 2014)

Data shows that in 1960, the rich, who represented 5% of the population, received 27.7% of national salaries and 35.8% in 1990. In contrast, the poorest of the poor, representing 20% of the population received 3.5% in 1960 with a decline to 2.3% in 1990. Besides, the worker's party (Partido dos Trabalhadores) in 1994 claimed that 60 million Brazilians were living in conditions of poverty. Amongst them, 32 million lived in conditions to the point of starvation. Conditions which were described as "social apartheid" (see Smith et al., 2002).

From this perspective several questions can be raised: How can Brazil be one of the stronger economies in the world and at the same time have one of the most unequal economic societies? Is it the innocence and/or the incompetence of the Brazilian people who have let themselves be carried away by the craftiness of the governors? Certainly these are complex issues that require a thorough theoretical and empirical investigation. However, in a brief response to the second question, if any incompetence exists it may not be incompetence in

good faith. In other words, Brazilian people do not want to be deliberately incompetent in relation to socio-political-economic issues, but rather they may be incompetent as a result of the political system that never gave equal opportunities to all.

The best opportunity that a government can give to its children is educational opportunity. However, the educational system put in place along the history of Brazil grossly underserved the poor – to the extent that half of the Brazilian population could not read when Juscelino Kubitschek de Oliveira took office (the national literacy rate was 43% in 1940 and 48% in 1950). Since then, the rate of illiteracy decreased, but today it is still very high with 14.6 million people at the age of fifteen and above who are classed as illiterate (see Fuentes, 2014). Public schools in Brazil struggle with a lack of qualified teachers, facilities, equipment, security, and so on and so forth. They are only slightly better because of the voluntary help of community and non-governmental organisations. In contrast, the quality of private schools is far superior. However, with a cost that is almost four times the monthly salary of a working class person, attendance in private schools is only accessible for the middle and upper classes. Consequently, these elitist class students are the ones who go to the best universities in the country and get the best jobs. And so, the dominant and dominated cycle continues with the working poor struggling throughout their entire lives without realistic opportunities for improvement.

Under this context, it could therefore be argued that football in Brazil offers opportunities that underprivileged children don't usually have through other means. It is an opportunity for yielding economic independence and social recognition as exemplified by many of the Brazilian football icons. They become the heroes of a nation "who represent the triumph of men from a poor background over the wealthy and powerful" (Miller et al., 2007, p. 20). They are the heroes who represent nationally and internationally the history, the values, and the identity of Brazil (see Miller et al., 2007).

4.7 Summary

This Chapter has explained how the nature, structure and bodily forms of Brazilian football are inherently a social product of Brazilian society. In this sense, football is dialectically entangled with social struggles involving issues such as race, social class, exclusion, and poverty. Introduced more than one hundred years ago, I have detailed its path in becoming the most popular sport in Brazil. Along a series of episodes and processes that unfolded with republican, industrial and urban development, football was professionalized under the influence of Vargas' government, entrepreneurs, journalists and the masses. For the latter, football represented and represents an important means of social mobility and reassurance of competence.

As the participation of the masses increased in football and with the pressure for professionalization of the sport, the values of democracy gained force and space and Brazilian football was transformed from its reserved and exclusive British roots to a more open and flamboyant style of playing. In this regard, an important factor to be considered is the influences of African-Brazilians who have infuse their socio-cultural norms into footballing style. As further delineated in the next two chapters, socio-cultural contexts such as samba (carnival) and capoeira has attained a cultural presence within Brazilian society and many renowned Brazilian footballers have been engaged in these socio-cultural activities, thereby influencing the way that they play football through bodily dispositions and influences skill acquisition and playing style.

Therefore, in this chapter I argued that the Brazilian football style can only be understood in the sense as emerging from those broader socio-cultural processes. Ultimately, I hope that it will be clear by the end of this thesis that skill acquisition is contextualised by these socio-cultural contexts, and does not work independent of them.

CHAPTER 5

The Role of Apparently Aversive Socio-Cultural Constraints on the Development of Brazilian Footballers

5.1 Introduction

From the theoretical framework of ecological dynamics, expertise in sports emerges from the interaction of multiple constraints (Phillips, Davids, Renshaw, & Portus, 2010). At an individual level, important interactions amongst constraints could include the relationships that evolve between one's family, friends, coaches, and also specific training activities (Farrow & Raab, 2008). More broadly, other environmental constraints can be the socio-cultural-historical contexts that influence expertise development in sports around the world that enjoy national prominence, such New Zealand (e.g., rugby union) and Brazil (e.g., football). An increasing number of studies have demonstrated the influence of environmental constraints on the development of sport expertise (see Davids & Baker, 2007). Whilst making important contributions to knowledge, such studies have been limited in scope and fail to consider in depth how informal and sometimes aversive learning environment constraints influence skills development (Araújo et al., 2010).

Within this chapter, Bronfenbrenner's model serves as a framework to organise, codify and categorise the socio-cultural constraints that influence the expertise development of Brazilian football players. Such research procedures were influenced by my own background (see Prologue) and in turn underpinned methodologically by the philosophical assumptions of the interpretive paradigm (see Chapter 3 for further details). Framed by the historic contextual analyses of Chapter 4, I proposed that the development of football expertise of Brazilian players has been informed by the socio-economic history of the country. This chapter builds upon these ideas by providing an in-depth analysis of the socio-cultural constraints that have emerged from the data. Before presenting these findings, I will briefly describe how Bronfenbrenner's bioecological model has been applied as a supporting framework.

5.2 Procedures

Data were generated via historic contextual analysis (Chapter 4), participant observation and unstructured interview. The historical analysis was performed first in order to inform the interview and participant/observation methods. Under the principles of Bronfenbrenner's model, the historic contextual analysis of Brazilian football fits the "*time"* component of the bioecological model which permitted an analysis of the socio-cultural transitions throughout the history of Brazil. Information obtained for the historical analysis was retrieved from texts sourced from the University of Otago Library, Online Databases, the Internet, and partly from Brazilian books and articles (which were translated, paraphrased and/or directly quoted from Portuguese to English). An ethnographic strategy including interviews and participant observations was performed in Brazil during the period between December, 2010 and February, 2011, except for the interviewee Daniel Bocatios who was interviewed in Queenstown, New Zealand (see Table 3 for further details). Access to this field work was made possible via 'gatekeepers' from my hometown Jundiaí, São Paulo. Once there, the research field work 'snowballed' by meeting new people who agreed to contribute. Although the research procedures are described here for clarity in a sequential, linear fashion in fact they were applied in a nonlinear process in which they became iterative and interrelated to each other. In other words, the different types of data collected did not follow a one-way linear path in the analysis. Rather, it was a nonlinear, non-sequential research process based on the notion of *reflexivity* (Dowling, 2008) meaning that I had to reflexively move back and forth between the methods, theories and paradigms in order to adjust and in turn enhance the quality of empirical procedures.

5.3 Participants

Fourteen adults with different football related backgrounds were identified based upon their extensive experience of Brazilian football. Amongst them were: two youth coaches, two professional coaches, one professional goalkeeper coach, one player agent, one personal trainer, two youth players, one social worker, one football development manager, one academic, one journalist, and one professional football fitness trainer (see description in Table 3 below). All participants signed voluntary informed consents to participate in the study and also for their identity to be revealed in this thesis.

Initially, the sample included two semi-professional female players whose interviews were also transcribed and analysed. However, when analysing the information yielded from these two participants it became clear that significant gender-related differences were emerging between them and the male participants. Whilst not wishing to play down the likely important influence of factors such as gender/masculinity upon expertise development these had not been framed explicitly within the historical contextual analysis. In addition, while emergent data from the interview of these two female participants may have provided rich information, they would have been more suitable for studies viewed from a *critical paradigm*[16], which is out of the scope of this thesis. This is not to say that from a motor learning perspective gendering skill acquisition investigation would not be significant. In fact, it is so significant that is worthy of a dissertation length work in its own right. However, in order to further explore this issue in a contextualised manner, I had to have more data

[16] Critical research aims to provide knowledge which enables people to take control of their own lives. The starting point for critical analysis is the imbalance of power for different groups in society. In physical education, for example, this kind of analysis tries to explain "how our practices in PE have been constructed, why they have been constructed in certain ways, and what categories of individual benefit from these decisions" (Sparkes, 1994, p. 14). Under this view, research in football would try to explain, for instance, how gendering in football has been constructed, why it has been constructed in certain ways, and what categories of individual benefit from these decisions.

which due to the limitations and delimitations of this thesis (see further details in Chapter 7) I could not afford to advance with further data collection. Therefore, to improve the clarity of findings and permit the analysis to reach saturation point it was decided to exclude these participants from further investigation. All remaining participants were male.

Table 3. Short description of participants (interviewees) organised by first names in alphabetic order. Interviews were conducted in informal, public areas such as cafés, football clubs and in my homestay.

Participants	Background Information
Antonio Carlos Silva	Considered one of the best youth coaches in Brazil and works for São Paulo FC. He has previously coached many football icons such as Miller, Kaka, Oscar, Lucas to name but a few.
Antonio Trama	Was the financial advisor of SPFC when they won two Club World Cups in Japan in 1992/93. He is now a Fifa agent working primarily in managing the careers of young players.
Carlos Lima	Widely considered one of the most successful football goal keeper coaches in Brazil. Currently he works for Paulista Football Club.
Daniel Bocatios	A former professional goalkeeper coach in Brazil. He finished his career and gained a degree in Physical Education. Currently he works as a personal trainer in Queenstown, New Zealand.
Eduardo Conde Tega	Played for the youth of Paulista FC. He then became a manager for the professional team in 2011 and currently he is the manager of the University of Football, working under the supervision of Medina.
Fernando Moreno	A highly experienced fitness trainer with national and international experience. Amongst the top clubs he worked for the São Paulo Football Club and Paulista FC.
João Paulo Medina	One of the current football authorities in Brazil. He started his career as a fitness trainer reaching the peak as fitness trainer of the Brazilian national team. He then became one of the most successful football coordinators in Brazil. He is also an academic in physical education in which he lectures in many universities including ESEP in São Paulo. More recently he has developed a football online course called University of Football.
José Sérgio Presti (Zé Sérgio)	Well known footballer in the 1980s playing for São Paulo FC. In 1978 he was in the Brazilian National squad to play in the World Cup in Argentina. Currently he is the youth coach of São Paulo FC.
Marcos Guterman	Works as writer and a reporter for one of the biggest newspaper in Brazil, The Estado de São Paulo. He wrote the book: Football explains Brazil.
Mike dos Santos	A young football player who has just turned professional. In 2011 at only 17 years old he was the top scorer of the Paulista FC professional team. Due to his talent, The International team from Southern Brazil contracted him. In 2012 he was selected for the U20 Brazilian National Team squad to play a tournament in Argentina.
Oswado Alveras (Vadão)	One of the most successful football coaches in Brazil. The last received prize was the award of best coach of Paulista League when he coached Guarani Football Club. However, he is well known for winning the same

	league in 1988 with an underdog country side team called Mogi Mirin where one of the biggest football icons in Brazil emerged, Rivaldo.
Rafael de Almeida	Played for the youth team of Paulista and soon was contracted by the powerful Gremio FC in 2012.
Rodrigo Debritto	Has a degree in physical education and works as a social worker with underprivileged children of shantytown Vila Ana.
Vagner Lopes	Was born in Brazil but became naturalised Japanese. He started his football career at São Paulo FC in Brazil before moving to Japan where he played for different clubs such as Kashiwa Reysol, Honda, Bellmare Hiratsuka, Nagoya Grampus, FC Tokyo, Avispa Fukuoka. He was part of the Japanese National Team in the 1998 World Cup. As a coach he started his career at Paulista FC in 2005, then went to different clubs and currently is back coaching the Paulista FC for the second time.

5.4 Field Work: Description and Illustration of the Settings

I started my field research journey in my home town in Jundiaí, province of São Paulo. This is due to the privileged access that I had to the place and people from my childhood connections. From there, I expanded my research to other locations as suggested by my primary gatekeepers (see Chapter 3 for further details). Within the region, I purposefully identified three contrasting environments in which I participated and/or observed football activities. These different environments provided opportunities for voices from a range of different training and playing backgrounds. The chosen environments were Paulista Football Club (participant/observation of the professional team), São Paulo Football Club (mainly observation of the youth team coached by Silva), and in a favela called Vila Ana (participant/observation of children of different ages). In order to have a better understanding of these settings, I next provide a short description and example images from each.

5.4.1 São Paulo State

São Paulo is the State with the country's largest population, largest industrial complex, highest economic production, home to the largest number of immigrants and, consequently, the most cosmopolitan state in South America (see Figure 3). In relation to the economy, the

state of São Paulo contributes almost 50% in volume terms to the Brazilian banking system. Also, Latin America's largest stock exchange is located in the State's capital, São Paulo city. The city of São Paulo has a population of 20 million people. Although this city is well placed in the economic ranking of Brazil, there are also many long-standing socio-economic problems such as drugs trafficking and a high street crime rate. With regards to football, the city has three of the top ten clubs in Brazil: Corinthians AC, Palmeiras FC, and São Paulo FC. A large number of Brazilian football icons have emerged from the city and/or from the State of São Paulo (e.g., Pelé, Rivelino, Sócrates, Kaká, and Neymar). As you read through this chapter you will be able to identify the symmetric relationship between São Paulo's physical and socio-cultural environmental constraints and players' skill development (for further details see http://www.saopaulo.sp.gov.br/en/conhecasp/).

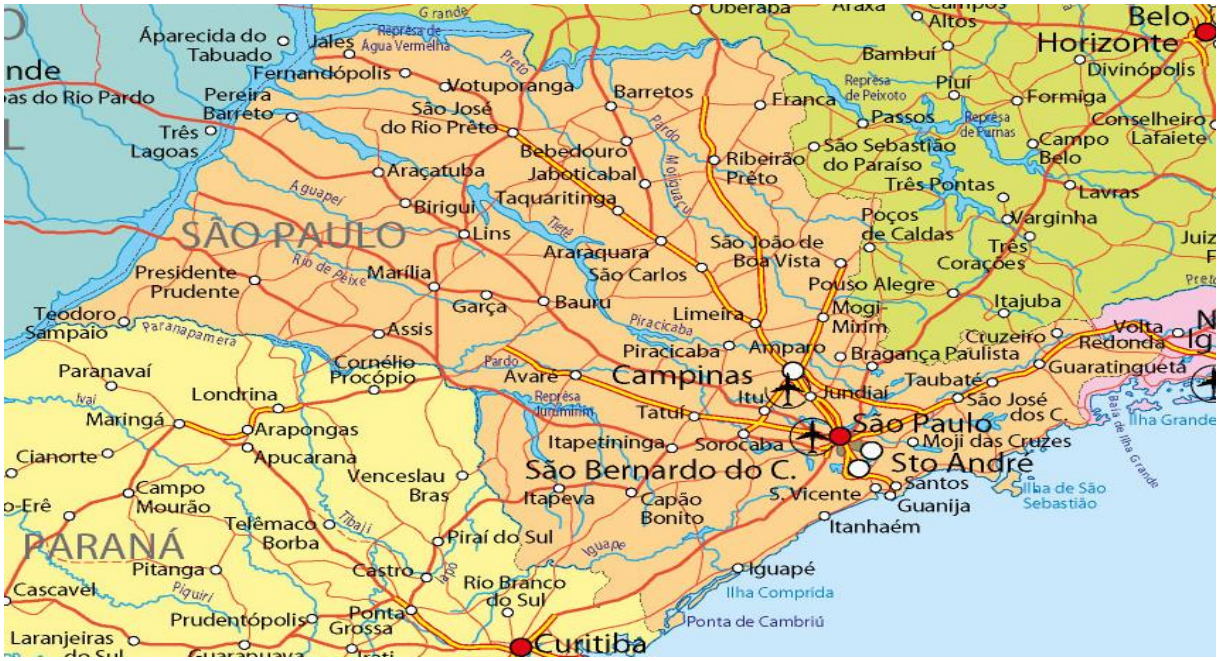

Figure 3. Map of the State of São Paulo, Brazil, including my home town Jundiaí.

5.4.2 Jundiaí

Jundiaí is a city and municipality in the State of São Paulo, Brazil (see Figure 4). The population in 2010 according to the national census of the Instituto Brasileiro de Geografia e

Estatística (IBGE) was 370,126, and the area is 433.958 km². The elevation is 761 m. It is 60 km north of the city of São Paulo. The municipality was founded on December 14, 1655, when it was elevated to the category of village. Its first phase of urbanization was carried out in 1657. Gradually, both immigrants and their descendants were integrated into Jundiaí community. Today, over 75% of the population is descended from Italian immigrants, who constitute one of the largest colonies throughout Brazil. Jundiaí has enjoyed a steep population growth, in large part fuelled by a shift of residents from the megalopolis of São Paulo, seeking better living conditions. The only professional club in Jundiaí is Paulista FC (for further details see http://www.jundiai.sp.gov.br/).

Figure 4. A panoramic view of downtown Jundiaí, São Paulo, Brazil.

5.4.3 Paulista Football Club

In 1903, Companhia Paulista de Estradas de Ferro ("São Paulo Railroad Company") employees founded Jundiahy Football Club. For administration reasons, the club struggled to

survive and in 1908 it closed. However, with the effort of players, supporters and local business enterprises, the club was re-opened under the name of Paulista Futebol Clube in May 17, 1909. Currently Paulista play 1st division of São Paulo championship and fourth tier of the Brazilian National league. The home stadium is the Jayme Cintra stadium built in 1957 with a capacity of 15,000 spectators (see Figure 5). During my field work, I participated and/or observed their training between the months of January and February, 2011. Three of my interviewees either worked or played football for Paulista FC (see Paulista Futebol Clube: Wikipedia, 2014).

Figure 5. Panoramic view of Jaime Cintra Stadium, Jundiaí, São Paulo, Brazil.

5.4.4 São Paulo Football Club: President Laudo Natel Athlete Formation Center

Founded in 2005, the President Laudo Natel Athlete Formation Center of São Paulo FC, also known as CFA Cotia, is located in the region of Cotia, around 30 km from the São Paulo city (see Figure 6). The centre has a specialist structure to accommodate youth athletes who are pursuing a professional football career. Built on a large area of 220 square metres, the CFA

Cotia includes one stadium, ten training soccer fields, gymnasium, gym, swimming pool, restaurant and a five star hotel. Today, this youth training centre in one of the largest centres for sport exchanges in Latina America, receiving national and international delegations of various sports. Coaches, nutritionist, doctors, dentists, physiotherapists, psychologists and administrators work in the CFA Cotia with the aim of developing elite players. Two of my interviewees (Silva and Zé Sergio) worked as coaches in the CFA Cotia (for further details see http://www.saopaulofc.net/estrutura/cfa-cotia/).

© São Paulo Futebol Clube.

Figure 6. A panoramic view of the São Paulo F.C. Cotia Youth Training Centre.

5.4.5 Favela Vila Ana

According to IBGE (2010) Jundiaí has approximately 18,500 people living in shantytowns and Vila Ana is one of Jundiaí's suburbs in which its population lives under those socially deprived conditions presented in slums (see Figures 7). The region has an undesirable reputation for illegal drug trafficking. My gate-keeper for this place was also one of my

interviewees called Rodrigo. For two weekends in January, 2011, I talked informally and played football with children from this favela and also helped to organise a mini-tournament (for further details see http://paulomalerba.blogspot.co.nz/2012/09/a-verdade-sobra-favela-na-vila-ana.html).

Figure 7. Youth from favela Vila Ana, Jundiaí, São Paulo, Brazil.

5.5 Analytical Procedures

Guided by the qualitative analytical steps proposed by Creswell (2009), I prepared and organised all raw data according to their sources. I read all of the transcripts in order to have a general sense of the information and to reflect upon the common findings and their meanings. Interviews were transcribed and field notes were typed. Both materials were then translated from Portuguese to English. Although I was mainly responsible for the translation a Brazilian academic teacher (Flavia Rubini), who has worked as a Portuguese Lecturer for

the University of Otago, Department of Languages, also helped with the translation. Flavia went through the relevant raw data and then corrected my translation when necessary. Then I turned to coding the data to extract relevant information that matched the purpose of this thesis. My initial analysis of the interview transcripts promptly indicated four constraints that fit the contextual dimension of the bioecological model (delineated in the present chapter).

These constraints are: pelada (pickup games played in unconventional learning environment conditions), home (delineated under the notion of family support), federated clubs (discussed under the view of training system), and poverty. Based on their roles and significance, I have respectively categorised these constraints with the first three ecological nested systems of Bronfenbrenner's model. First, pelada was categorised as a microsystem as it provides activities, roles, and interpersonal experiences in a setting where Brazilian children can readily and directly engage with the physical as well as socio-cultural constraints offered by pelada (Bronfenbrenner, 1979). Secondly, home (family support) and federated clubs (training system) were organised under the mesosystem component of the bioecological model because the mesosystem comprises the interrelations amongst two or more settings (e.g., home and federated clubs) in which Brazilian children actively participate and transit from one setting to another. Finally, poverty has been categorised as an exosystem due to the fact that it refers to one or more settings or contexts that do not involve the developing person as an active participant, but has an influence on person's behaviour and development. In other words, a child in development is not responsible for the financial situation of his family as neither he/she directly participate in the type of job his/her parents have. However, such financial situation indirectly influences process with the immediate settings. As an example in football, a lower income family may not be able to provide access to appropriate facilities nor provide adequate shoes for their child. As a consequence, the

child has to learn their skill in bare feet in unconventional facilities such as the ones provided in pelada.

Additionally, two other codes were identified at the macro-system level, i.e., dance (samba/capoeira), and malandragem which will be discussed further in Chapter 6. But before I reach there, the rationale for choosing the macrosystem as the ecological nested system to categorise these constraints relies on the fact that they are cultural events that have consistently been part of the Brazilian society (for further details on definitions of Bronfenbrenner's nested system see Bronfenbrenner, 1979, 2005; see also Chapter 3 of this thesis).

To reinforce the quality of this investigation, I first performed a pilot study in which I practiced interviews and codification before I left New Zealand for Brazil. To enhance trustworthiness, a Brazilian academic fellow (Daniel Aldabe) who works as a lecturer for the University of Otago, Department of Physiotherapy acted as a peer examiner …"for the purpose of exploring aspects of inquiry that might otherwise remain only implicit within the inquirer's mind" (Lincoln, et al., 1985, p. 308). In addition, member checking has also been employed so that participants had the opportunity to check my interpretation to ensure accuracy, fairness, and completeness (see Patton, 2002). All the codifications were based on the principles of point of saturation as well as on rich information, that is, information that can add value to the analyses (see Chapter 3 for further details).

5.6 Results and Analysis

5.6.1 Microsystem under the Context of Pelada

The microsystem of the bioecological model encompasses the relationship between the developing person and his/her activities, roles, and interpersonal relationships with the immediate physical and social environment such as family, school, clubs, and

neighbourhood. The interaction between individual, task and environment constraints will determine the quality of the development of a child (see Bronfenbrenner, 1979; Krebs, 2009). In the case of São Paulo region, the interaction of children with their immediate physical environment appears to have an important role in their football expertise development. Historically, successful Brazilian players are often associated with the notion of developing their skills in natural learning environments under multiple tasks and environmental conditions (Araújo et al., 2010). Many Brazilian children live in poverty and therefore have to draw upon whatever physical means they have to play (see Exosystem sub-section). It is important to highlight that by being exposed to informal learning conditions, children in Brazil tend to explore more than football itself with other activities such as climbing trees, swimming in lakes, and any other physical activities that tend to be fun (see Table 4). In drawing attention to this issue, such activities encourage adaptive skills, creativity and improvisations and ultimately the overall enhancement of body movement coordination. In this sense, these activities can be seen from the notion of deliberate play, one of the learning concepts previously discussed in Chapter 2.

Table 4. Quotes from the interviewees* highlighting their experience on playing in a natural learning environment (my translation). *These interviewees have been directly involved with professional football.

Vadão	I lived in a small town so we had a lot of space to play and at that time it was safe to play around my neighbourhood. We swam in the rivers, climbed trees to get fruit, played hide and seek, etc. Football of-course was my favourite. It was normal for us to play football bare foot with homemade balls.
Carlos Lima	In think we Brazilians learnt skills in a natural way or at least used to. This helps in the acquisition of skills rather than in just learning tactical movements. Therefore, the fact that I played a lot in a natural environment under all sorts of fun tasks, all of that have positively affected my motor-perceptual skills.
Vagner	I played football everyday on the street, but I also did what other kids in my time used to do. We trespassed into some farms to get fruit from trees, such as avocado and orange. We learned how to swim in the lakes around. We had to be smart to not come home with wet pants, as if so our mums would smack our bums.
Daniel Bocatios	Given that I lived in Rio de Janeiro which is surrounded by hills and mountains, we had a lot of natural environment to play all kind of games, but ultimately we

	all ended up playing football more than anything else every day on the street.
Mike	No doubt that I played more football than anything else. It was and still my passion. But as a kid I lived in a suburb surrounded by nature and there we were able to play all kind of other games too.
Zé Sérgio	Swimming in the rivers, stealing fruit, running here and there, running after balloons, my childhood was like that. Today that does not exist anymore, well at least in São Paulo city where urbanisation has dramatically increased.

Underpinning each of the quotes in Table 4, the most important activity for the interviewees is football. However, under those informal learning environment conditions the word 'football' means not only the traditional 11-a-side regulation form of the sport but playing various football related games such as street soccer, beach soccer, 2 vs. 2 and so on. Another popular collective term that can be used to summarise these form of football activities is 'pelada' – literally translated as nude and alluding to the 'naked' environment where football can take place (Araújo et al., 2010). Pelada also means pickup football where, regardless of the location, players organise games themselves in an informal but very competitive manner. On this note, pelada is usually played on irregular surfaces (e.g., streets, beaches, yards, makeshift grounds, courts, etc.) where the boundaries of the playing area are usually marked on the spot, although it can also be played in demarcated venues such as soccer fields and futsal courts. In addition, pelada is played under different rules and norms. For instance, the number of players per team will depend on the number of people present to play. Age is not a factor to be considered as they all play together. Usually the two best players are assigned to select the teams so skills are relatively equally distributed. If the number of players is too high for the size of the playing area, then more than two teams are formed. In this case, the traditional way of setting up the time is ten minutes of playing or two goals (if two goals are scored before ten minutes, the waiting team takes the place of the loser team; the winner continue playing until they lose). Given that everyone wants to play as much as possible, a high intense level of competitiveness is naturally created.

Under this context, the informal yet competitive form of pelada provides learning opportunities to occur in an implicit and self-organised way. In this sense, pelada contrasts with the notion of traditional form of training, such as the deliberate practice, where learning occurs under a rigorous and structured regime involving a massive amount of practicing for an extended period of time (see Ericsson & Williams, 2007). Having said that, according to Araújo et al. (2010) pelada does not necessarily emulate the notion of deliberate play either, mainly because:

> …these activities were not games that resembled football, but they were real football experiences practiced under changing ecological constraints. Similarities in the nature of the specific task goals, as well as a number of rules and conditions for that activity, were such that players and observers perceived that a football match was being played. (p. 10)

Based on these insights, the underlying characteristics of pelada seem to be out of the conceptual scope of both deliberate practice as well as deliberate play, although pelada tends to share more similar concepts with the latter rather than the former (see Araújo et al. 2010; Côté et al., 2007; Côté & Hay, 2002). Based on my personal experience and cultural background, I can attest that the difference between pelada and deliberate play is the highly intense competitive nature of pelada. In other words, while the idea is to play pelada for fun and intrinsic enjoyment, nobody wants to lose. So the intrinsic motivation is based on winning and to achieve that, everyone competes hard. In the case of losing the consequences are considerable, for instance, waiting for their turn to play again or being vulnerable for jokes like “losers”. The latter can wound ones pride and it seems to me that when it comes to football, Brazilians don’t like their sense of pride to be messed up.

In this sense, pelada provides dynamic practice experiences that influence the development of expertise in Brazilian football. Indeed, many former high profile Brazilian players describe pelada as a crucial part of their football development (see Table 5).

Table 5. The influence of pelada on the development of football expertise described by former high profile Brazilian football players. (Adapted from Araújo et al., 2010).

Pelé is considered one of the best football players in the history of football.	"It is necessary to grasp these opportunities with one's fingernails. All those experiences, and that conviviality, helped me a lot in my preparation" (Pelé, 2008).
Zico is one of the best Brazilian players ever; and the 14th best player of all time in the world selected by FIFA. Zico played as a midfielder in the Brazilian national team in the World Cups of 1982 and 1986.	I used to spend my whole day with the ball. Sometimes I made little sock-balls and sometimes I played with those rubber balls. I threw it at the wall and then I tried to master the ball alone in my room. Sometimes, I played as a goalkeeper and all those things gave us reflexes. Maybe, a portion of my ability is a result of all these practices (see Assaf & Garcia).
Castro wrote Garrincha's biography (Garrincha was a Brazilian right winger and forward who helped the Brazilian national team win the World Cups of 1958 and 1962. FIFA considers him the best Brazilian player ever after Pelé. He is also widely regarded as the best dribbler in football history)	Dribbling the ball bare feet, without twisting or damaging your ankle on uneven surfaces is a considerable feat in itself. Dribbling on the border of a slope and not allowing the ball to drop down was another great challenge. Garrincha performed both of these tasks in a very easy way. After losing control of the ball on the uneven surface so often he learned how to dribble on uneven surfaces and against the opponents. Garrincha really hated to go down a slope to retrieve the ball – so he tried not to let it drop out of control down there (Castro, 1995, p. 38).

In particular, the above excerpts reinforce that non-systematic forms of coaching were received and players had to be intrinsically motivated to be able to learn on their own. Thus, a key point to emphasise is that with pelada the whole social system (i.e., players and environment) tends to self-organise rather than one person (e.g. coach or referee) organising everyone. The interview transcripts also show that pelada is still currently a strong socio-cultural constraint influencing the development of many Brazilian footballers, although some interviewees (e.g., final quote from Zé Sergio, p. 85) allude to increasing urbanisation possibly curtailing opportunities for pelada to occur in the future. While not all of my

interviewees were professional football players, they all have experienced the practice of pelada when growing up, as evidenced in the interview excerpts below (see Table 6).

Table 6. Quotes from interviewees highlighting their experience on playing pelada.

Daniel Bocatios	As any other Brazilian boy, I started playing on the street. I was younger and played with adults and also with my mates of my age. But age was not a problem. It was a pick up system, that is, whoever was present and keen to play were picked up.
Marcos Guterman	As I wrote in my book, the British people in Brazil played with a proper soccer ball made of leather, they had proper field with appropriate goal posts. In contrast, the under-privileged boys (socio-financial poor children) played on the streets with balls made of socks. Therefore, they had to develop skills as a necessity to avoid injury.
Mike	As a kid I played every day on the street and on makeshift grounds. It was great fun.
Trama	Many football players emerged from the countryside of São Paulo and of Brazil in general. This is because there was more space and everything was cheaper. The streets themselves were football fields. There was no asphalt. We just placed some rocks as small goals and played with balls made of socks.
Vadão	I played all kinds of football when in my childhood. I played in bare feet so to control the ball was much more difficult because it hurt my feet. But I believe that all the most skilful players have a background where they played bare feet too.
Zé Sérgio	In my childhood it was normal to play pelada bare feet. Fields with grass were hard to find. We played in the parks and used the trees as goal posts...and there we played a lot...
Carlos Lima	I played a lot of street soccer. I believe that street soccer with all those levels of difficulties such as stones, mud, and so on, force you to become more skilful in terms of controlling the ball.
Moreno	It was invaluable. We played all bare foot. This makes you kick the ball in a different way, to protect yourself. Until we learned we lost a lot off the tips of our toes.
Rafael	We started on the street, in the footpath, in the sand, in the parks; all bare foot.
Silva	Where I grew up, the streets were not asphalted so we just put blocks as a mini goal and played pelada a lot.
Vagner	In Franca we played pelada on the streets. From the age of 6 to 18 was all mixed. We know that football has 17 rules. In my street there was just one. That is, if you don't see blood there is no foul. This makes you smart to play. I knew that if I bumped into a boy of 15 years old I would get injured so I had to avoid physical contact by checking all the time my front and my back. This makes you develop the ability to think quick and seek for free space to play.

In my field work at favela Vila Ana, I had the opportunity to observe and play pelada with local youth and teenager players (see video clip "Luiz Playing Pelada" in the DVD attached

in the Appendix section). The venue was a deteriorated futsal court (see Figure 8) partially built up with money from the "lords" (a term used by the children to refer to the drug dealers). The characteristics of pelada discussed above were present at all levels, including for instance, playing with bare feet, improvised and dynamic rules, mixed age and gender, using an old, tattered ball, and players self-organising into teams. In addition, the enthusiasm to play, the happiness and celebration of scoring goals, the determination to win, the teasing, and the arguments between players were all evident (see video clip "Pelada at Different Stages of Learning" in the DVD attached in the Appendix section). Regarding the latter, it was interesting to see a big boy (about the age of 14) telling off and threatening a smaller one (about the age of 10) with expletive words. To my surprise, rather than running away the small boy confronted his larger opponent and was clearly up to the physical challenge. As often is the case with such confrontations, nothing happened and the incident passed without violence.

Figure 8. Vila Ana futsal court, Jundiaí, São Paulo, Brazil.

In terms of skill levels, there were often large discrepancies between players, but the sense of playing with ginga was evident. The aim for instance was not just about scoring goals but scoring goals with style. On several occasions, I observed that when a particular player had the opportunity to score a relatively easy goal, he would perform one or two more dribbling moves to make the goal more flamboyant (see video clip "Ginga in Vila Ana" in the DVD attached in the Appendix section). On this note, several assumptions can be taken from this. For instance, it can be argued that showing flamboyant skills is a matter of establishing socially defined masculine hierarchies with footballing prowess as a key part of that. In contrast, it can also be seen as a way of corporeal expression, a socio-cultural phenomenon that has been embedded Brazilian culture (see Ginga section in the Introduction Chapter).

Perhaps surprisingly, the concept of pelada is not limited to informal or amateur levels. At the professional club Paulista FC, I noticed that prior to the start of each training session, a group of players would self-organise and play a modified football game. Their favourite was 'footvolley' played in the changing room with an improvised kind of volleyball net. It was 2 vs. 2 with only one touch allowed per player and maximum 3 touches per team in which the third touch had to be a pass over the net to the other side. The winning team stayed and the losers had to give their place to another team. Although it was a different type of pelada game that I had witnessed in the favela, it represented the essence of pelada. The competitive nature of the game was obvious, as was the effort to create and improvise skills like passing the ball with the shoulder. Other ingredients of pelada, like the fun, laughing, teasing, and even some level of argument between team mates when they lost were evident too (see video clip "Paulista FC Footvolley" in the DVD attached in the Appendix section).

Another pelada-like activity I observed is "rachão", a game that is traditionally played one day prior to any official match. Rachão is not an exclusive game to the players as the coaches participate too. Usually the number of players per team exceeds eleven alluding

therefore to the name of the game, rachão (big division). It is a half pitch game with only two touches allowed. Players do not necessarily need to play in their official position and this was a great opportunity for the goalkeepers to play as field players. Usually the reward was two bottles of coke. Given that they usually don't drink fizzy drinks due to their nutritional regime and given that the weather temperature is usually around 30 degrees Celsius in the summer, everyone fought very hard for those bottles of coke! Once again, the principles of pelada were there, with high level of competition, passion, and again arguments between oppositions as well as team mates (see video clip "Paulista FC Rachão" in the DVD attached in the Appendix section).

Similar to what I observed in the favela, I noticed two incidents in which people were telling each other off. The first one was the main goalkeeper coach yelling at the fitness trainer because the latter made a mistake in the rachão game. The second was a senior player grumpily telling off a younger one for not passing the ball. Interestingly, the young player stood up and aggressively argued with the senior one. Although this may be seen as a negative aspect of pelada, it can be considered positive in a psychological sense where Brazilian football players have to have mental resilience and/or toughness to be able to reach, play and survive at that level of football. However, the key point is that pelada has been ingrained so deep into the Brazilian football culture that even in a professional environment players get engaged into different forms of game (e.g., footvolley; rachão) to entertain and enjoy themselves but without losing the competitive spirit of winning.

Certainly, pelada is not exclusive to Brazil (see pelada movie in Boughen, Fergusson, Oxenham, & White, 2009). Other countries play their forms of pelada too. Personally I have played pelada in Japan and in New Zealand. In comparison to Brazil though, what I found interesting, is the lack of competitiveness when pelada is played in these other countries. There was little noticeable effort to win the game. I could not understand why players

laughed when the opposition dribbled past them or scored a goal. In this sense, pelada in Brazil is not supposed to be just a fun game between mates. It is a competitive game that no one likes to lose. The players will try to humiliate their opposition by performing flamboyant skills and scoring goals. The biggest humiliation is when someone dribbles past another by passing the ball between their legs. It is a matter of honour not to let it happen and when it does, you are expected to try to get revenge. Under this scenario, a competitive environment is created which in turn is useful for the development of perceptual motor skills. It would be interesting in further research to explore the different variations of pelada that exist around the world and identify whether specific socio-cultural constraints in each country impact upon the way pelada is played.

From these findings, it can be seen that learning football (and all sorts of other games) in informal learning environments is a key socio-cultural constraint that has influenced the development of many Brazilian football players. As we can see from the data, the impoverished conditions which some would presume aversive to learning to play football may in fact become positive factors in relation to skill acquisition. For instance: controlling the ball with bare feet on an uneven surface using different parts of the feet, seeking for space to play, thinking quickly to compensate for a lack of physical strength and in turn to avoid injuries and so on. From a motor learning perspective the ideal conditions for practice of skill/s have historically been viewed as being specific to the conditions in which the skill/s must be reproduced (Proteau, Marteniuk, & Lévesque, 1992). In contrast the range of informal conditions in which Brazilian players develop their talent appears to provide perceptual-motor expertise which is adaptable to different playing environments. This line of focus is supported by previous studies which provided solid evidence on the importance of the environment influencing talent development (see Bloom, 1985).

At this microsystem level, a diversity of other influences have to be considered. For instance, once Brazilian players have gone through this improvised and unstructured way of learning, the best players are then selected to be part of federated clubs in which a more structured and specialised form of training takes place in order to further expand their level of perceptual motor skill expertise. One's family and home-life also play an important role on an individual's development.

Next I will highlight family and the training system within clubs as the two other microsystems that have emerged from the data. As explained below the intertwined nature of these systems together form a mesosystem of the bioecological model.

5.6.2 Mesosystem under the Context of Home and Federated Clubs

The mesosystem is a system of microsystems. That is, when a person's development links from one microsystem to another a mesosystem is created. As such, a mesosystem entails the inter-relation that takes place between two or more settings containing the developing person (e.g. the relationships between home and school or school and workplace) (see Bronfenbrenner 1979; Krebs, 2009). The processes that operate in different environments are interdependent, meaning that a person's individual microsystems do not operate independently, but are interrelated and attest influence upon one another (see Bronfenbrenner, 1979). In relation to the development of Brazilian youth football players, my data show that a mesosystem encompasses elements of *home* which was specifically delineated under the parameters of *family support* and *federated clubs*, referring more specifically to *training system* offered in these clubs. For example, a club may provide high quality training for the players who are also encouraged by their family to reach their full potential in football.

5.6.2.1 Home: Family Support

Family is typically the single most important influence in a child's life. From their first moments of life until adulthood, children and teenagers depend upon family for protection and provision for their needs such as good living conditions, education, nutrition, transport, time to play (not work) and so on. In sports, family also plays an important role, for example in providing support for children to cope with the psychological and physiological demands of training and games.

On a broad but related view, there are several insightful studies in the extant literature discussing the role of family in the development of expertise (e.g., Bloom; 1985, Carlson, 1988; Côté, 1999; Fredericks & Eccles, 2005). Similarly but more pertinent to this thesis, however, are the socio-cultural studies related more directly to Brazilian football (e.g., Marques & Samulski, 2009; Moraes, Rabelo, & Salmela, 2004; Moraes, Salmela, Rabelo, & Vianna, 2004; Moraes, Salmela, & Rabelo, 2000; Salmela & Moraes, 2003, 2004). Salmela and Moraes (2003) suggested that due to socio-economic disadvantages, there was potentially less family support for talented football players in Brazil compared to developed countries. From my own experience growing up in Brazil I can relate to this suggestion as my family could not afford to support me towards achieving my football dreams, although invitations to play at high levels of football were not scarce (see Introduction Chapter for further details). But I was not alone as my peers were in a similar situation. We organised team games on our own and trialled for top clubs in town. In many cases our parents were not even aware of our endeavours. One interviewee (Vagner) also confirms that his family could not afford to support him to pursue his dream due to financial and subsequently time limitations. He lost his father when he was still a baby and his mother was busy working full-time to provide care to a total of eleven children. As a young child Vagner had to work at a shoe factory during

the day and go to school in the evenings. Training and playing was only possible on the weekend, but as he explained:

> My desire to overcome all barriers and pursue my dream was paid off when I was scouted for a trial to play for SPFC at the age of 15. From there I blossomed, I got my first contract, represented Brazilian National Team U 20, then moved to Japan where I obtained Japanese nationality and ended up playing for Japan in the 1998 Fifa World Cup. I was the first Brazilian Japanese to achieve so. (Interview, February 16, 2011)

However, in the last few years there seems to have been a shift in relation to family support in Brazil. During the tenure of my participant observation research, I noticed an increase in support from families in many different regions in which I collected data. For instance, in my field work at the São Paulo FC, I noticed a large number of family members supporting their children by bringing them to the training every week. In other clubs and soccer schools such as Paulista, the situation was similar. Parents were present from the beginning to the end of training, supporting and cheering their children.

To exemplify such support, my interviewees Rafael and Mike provide some invaluable insights. To have an idea of the appreciation of Rafael for the support he has received from his family, he began crying when I asked him about his family. He mentioned that: "if it was not from his family support, I would not be able to be here today. Now as a youth professional player I want to do well, go to a bigger club so I can provide financial stability to my family" (Interview, February 20, 2011). Mike also mentioned that his whole family moved from one city to another when he was thirteen to support him on his dream. As a professional player now, he said: "I am paying back the support by providing financial support to my family" (Interview, February 21, 2011). These talk fragments also reveal football as a potential site of social mobility.

Although it is outside of the scope of this thesis to explain the apparent shift in family support, some assumptions can be drawn. For instance, parents may have realised how profitable it would be to have a son/daughter as a successful soccer player. Take Neymar for

example, one of the new Brazilian superstars. By the age of 15 years old, Neymar was earning US$ 20,000 per month from football. Subsequently, his father dropped his labouring to start looking after the finances of his son. Recently, Neymar was transferred to Barcelona for the sum of 86.2 million euros (see Lowe, 2014).

In addition, increasing family support could also be due to the fact that the Brazilian economy is booming and parents have more time and resources to support their children to pursue their dreams. Many other assumptions can be made but as noted earlier this discussion is beyond the scope of this thesis and may usefully serve as a source of investigation for future research.

5.6.2.2 Federated Clubs: Training System

With regards to training system once children reach the age of around fourteen years old, the best players are typically scouted and invited to play for a federated club. The best clubs around Brazil have the infra-structure to offer accommodation, education, and pastoral care for those who come from different cities or regions[17]. A good example is SPFC where I had the privilege to observe and participate in their training. In spite of the numerous fringe benefits from attending such training systems, the most important thing is that players have access to expert coaches. A good example is Silva who brings to his coaching methodology the essence of pelada. As Silva says:

> The key is to bring back some elements of pelada such as fun, enjoyment, and most important to give freedom so players feel comfortable to express themselves. In doing so they can try things that they have seen or new skills that they want to invent. But saying so, it has to be under a coaching methodology so that we can keep tracking the progression of our players. (Interview, February 8, 2011)

[17] In this case they lived away from home and family, thus breaking to a certain extent, the link to family support. For the majority of these players, they will have a better quality of life by living in the club compared to what they have at home.

By observing some of Silva's training sessions I noticed how he often manipulated task constraints in novel and creative ways. For instance, to improve the level of perception Silva uses head bands in his training instead of bibs. This strategy forces players to look up with more attention when trying to pass the ball. He also used a rugby ball so that the unpredictable bouncing forces players to change direction faster. Perhaps as a result of these innovative ideas, Silva has been one of the most successful youth coaches in Brazil. Out of this coaching supervision, many Brazilian superstars such as Kaká amongst others have achieved at the highest level of football worldwide.

Moreno, Tega and Medina (interviewees) have also advocated the importance of bringing the essence of pelada to their coaching methodology. Moreno for example said when he worked for SPFC as a fitness trainer he noticed that some of the youth players who came from big cities were lacking general motor coordination skills compared to those from the country side. So to provide some of this experience within the setting of his club he organised some unusual physical training such as climbing fences and trees. In a similar vein, Medina and Tega have developed an online football coaching course called University of Football in which pelada is evident within their coaching philosophy. One of Medina's main objectives is to 'rescue' the Brazilian culture of playing football. See our conversation as follow:

> Luiz: Do you think our Brazilian football players are still as skilful as they were before?
>
> Medina: I think we are still very skilful, but with some reservations. This is because we are making two major mistakes. One is because we are losing our culture of playing with that body expression due to the lack of natural learning environment as a result of urbanisation. Second, it is because such natural learning environment has been occupied by soccer schools that are not qualified in methodological understanding of our culture. Their training is too mechanised, losing the essence of learning the game in a natural way.
>
> Luiz: Given that this process of urbanisation is irreversible and the number of soccer schools tends to grow, what can be done so that we can keep developing players with high calibre of perceptual-motor skills?

> Medina: We need to bring back the essence of pelada, street soccer, to the training in soccer schools. But we can make it even better than playing pelada alone. We can introduce educational elements to it. This is one of the objectives of University of Football. This is what we are proposing. (Interview, February 10, 2011)

In highlighting these issues of urbanisation and soccer schools, it may explain why fewer players emerge from big cities like São Paulo as they used to. On this note, many of my interviewees (e.g., Trama, Silva, Vadão) have confirmed that the majority of their players originate from the country rather than cities. Interestingly, in my informal discussion with some of the youth players at Paulista FC, I could not find one player that came from a big city either. More interestingly, however, is the fact that of all of the interviewees who played at the top level of professional football, only two of them (Zé Sergio and Silva) grew up in big cities like São Paulo. But it was more than forty years ago when they were still able to play a lot of pelada as they highlighted above. The four other (ex-) players (Vadão, Vagner, Mike, and Rafael) who successfully achieve high level of football grew up in country-side places. For instance, Vadão is from Mogi das Cruzes, Vagner is from Franca, and Mike is from the periphery of Suzano (all districts' of São Paulo State). Rafael is from the outskirt of Natal, a city in the Northern territory of Brazil. This trend is in line with recent research on *'birthplace effects'* indicating that individuals from the country, towns and small cities have higher probability to become professional athletes compared to those growing up in large cities (see Bruner, Erickson, Wilson, & Côté, 2010; Carlson, 1988; Côté, MacDonald, Baker, & Abernethy, 2006; Davids & Baker, 2007).

Now, taking the risks of not being too reductionist in explaining the reasons underlying birthplace effects, existing literature provides insightful conclusions. For instance, Côté et al. (2006) pointed out that the optimal city size for athletic development ranges between 1,000 and 500,000 people and athletes from such communities may receive more social support and have greater amount of safe and recreational space available (see Davids &

Baker, 2007). This may lead to a greater amount of practicing or playing, resulting therefore in higher probabilities of attaining elite level of performance. In highlighting this issue, the argument above can also be directly linked to the notion of pelada, the socio-cultural constraints discussed earlier in this chapter. Consider for instance that, children from rural areas and smaller towns and cities may not have access to quality sport facilities and more highly organised junior competition. Instead, they tend to be self-organised and play in unconventional environments such as irregular surfaces including slope hills (Araújo et al. 2010). The latter provides opportunity to acquire skills in an implicit and/or self-learning manner, which in this regard a vast number of theoretical and empirical researches have consistently shown beneficial conclusions compared to the other forms of developing motor skills (see Farrow, Baker, & MacMahon, 2008; 2013; Masters, 2008; Masters & Poolton, 2012). Moreover, children from rural areas may have less financial access to buy shoes or any other football materials. Under this context, birthplace effects can also be linked to the notion of poverty, a constraint that will be discussed next.

5.6.3 Exosystem under the Context of Poverty

An exosystem is an environmental influence which affects a developing person but they are not directly responsible for it. A good example of an exosystem is the family economic situation in which a child relies on the parents for their upbringing. The level of wealth may impact the child in negative and positive ways (see Bronfenbrenner, 1979; Krebs, 2009).

In the case of Brazil, the number of people living in extreme poverty is estimated as at least 11.4 million (see Brasil, 2011; IBGE, 2010). Under this scenario, poverty has negatively impacted many children in development. Many don't attend school regularly, live in poor conditions and consequently are easily seduced by the life of crime and illegal drugs. An example is Rodrigo himself who explained how he went through this pathway:

> Yes, I was poor, living in a shanty town and drugs were 'in my face' all the time. I tried to avoid it but due to the frustration of living in such conditions plus the pressure from peers, illegal drugs such as crack became part of my life. But there is always a way to overcome it and move towards a healthy life style regardless of socio-economic status. I found my way. I got a degree in physical education and now I coach underprivileged kids from shanty towns in an attempt to guide them for better choices in life. As a physical educator, I am amazed by the level of skills of some of these kids. Everything seems to be natural for them. They never had a formal type of coaching but when they play football, their talent flourishes in the field. (Interview, January 13, 2011)

Arguably poverty can also create unique conditions in terms of the development of Brazilian players' football expertise. But why and how does it happen? Do players from poor families tend to be the more skilful players, and if so, why? Is it due to the environment in which they live? Does it involve a psychological factor such as motivation to improve their social status and support their family? These questions cannot be answered in a simplistic way as they involve an intricate network linking many other variables influencing the issue ranging from individual motivations to large scale structural constraints. However, what follows below may be useful as a starting point to initiate discussion.

For instance, as explained in Chapter 4, football in Brazil emerged out of irreconcilable differences between the rich and the poor. According to Filho (2003), since the beginning of football in Brazil, the higher social class players (the rich) had financial power to play under the best facilities such as fine grass fields and specialised coaching instructions. On the other hand the lower socio-economic status players (the poor) had to play with bare feet on streets full of stones and mud, and were forced to make their own football materials like goal posts made of bamboo sticks, avocado seeds, and balls made of socks. Nearly one hundred years later, many children have been playing under similar conditions as explained earlier. On this note, poverty can be connected to some of the constraints discussed above, such as learning in an informal environment through pelada as well as to the notion of birthplace effects. Notably, not all Brazilian children who have learned football in an informal natural learning environment were poor. But saying so, the children from poorer

families tend to be more exposed as they often live in underdeveloped areas such as favelas or in rural areas that lack structure and infrastructure.

While it can be argued that many underprivileged children have to find work or become involved with crime so time may still be limited, many may have more free time to play pelada given they tend not to focus on school. In fact, education has never been a priority in their lives and this may be explained by McLoyd (1998) who reported that persistent poverty has detrimental effects on socio-emotional functioning, IQ, and school achievement. On the other hand, it can be argued that children with financial support have more options and tasks to do, including education during the day. On this topic, Medina who dedicates part of his time to voluntarily work with under privileged children highlighted the issue as follows:

> I think the poorer the child the richer he/she will be in terms of body coordination movement. I don't want to close this information or generalise it, but from my experience as a physical educator and as a coach, I have observed it. In contrast, children from families with financial stability tend to be less physically coordinated, especially in the last fifteen or so years due to the advance of technology, computers, television, and electronic games. They play fewer of those kinds of games the poor children play in a natural learning environment. They tend to spend more time at home. In contrast, children of lower socio-economic status tend to be less educated compared to the middle/rich class children. They tend to focus less on education and like being outside playing. For that reason they are better physically coordinated children. As such, for those poor children who play football they tend to be more skilful players too, comparatively speaking. (Interview, February 10, 2011)

As this quotation suggests poor children may be more skilful because they focus more on playing football compared with rich children who tend to have other duties and hobbies. Hence, it can be argued that the development of football expertise in Brazil may also be a product of poverty. However, how can we explain why there are many middle class children who have reached top level of football and some with high level of ginga (e.g., Sócrates, Leonardo, etc)? From a positivist point of view, this answer can be explained by ontological deductive reasoning - a type of reasoning which goes from general to specific and is based on

premises and if the premises are true, then the reasoning will be valid. For instance, "all apples are fruits, all fruits grow on trees; therefore, all apples grow on trees". In applying this notion of deductive reasoning to Brazilian football it can then be said: "All Brazilians play with ginga. Leonardo is Brazilian. Therefore he plays with ginga". However, this type of reasoning cannot be applied to research concerning socio-cultural investigations where the *truth* can be only probabilistically concluded via inductive reasoning. In other words, inductive reasoning refers to premises that seek to supply strong evidence for (not objective proof of) a specific interpretation/conclusion. Such conclusions are based on interpretative paradigms as explained in Chapter 3.

In the case of Brazilian football it is rational to say that not all Brazilian players play with ginga, neither all come from socio-economically underprivileged backgrounds. Kaká for instance, a player who won the Fifa player of the year in 2007, comes from a middle class family and his style is closer to the objectivistic European football rather than Brazilian. On the other hand, Leornardo, a former Brazilian national team player, who also has a middle class background but unlike Kaká he played with ginga. Therefore, a more plausible reason for rich Brazilian children developing their ginga style can be explained by the theoretical assumptions of motor learning such as observation and transfer skills. This is because ginga football style has been so deep rooted as a popular culture that regardless of socio-economic status, children learn from each other by playing with each other, by observing each other carrying therefore the legacy of ginga across generations. My interviewee Daniel who came from a middle social class can add light to this issue:

> Growing up in Rio de Janeiro, I used to play with my mates of the same social class, but the boys from the favelas used to come down from the hills and play with us. There was a visible difference in their skills compared to ours. They were much, very much more skilful than us. They had what we say is the essence of Brazilian football and played with trickery, flamboyance and style. Everything that I learnt in terms of football was not from my mates but from those boys some of whom didn't even have enough food on a daily basis. But they were good at football. (Interview, December 12, 2010)

Here Daniel reveals the difference in skills between poor and rich children and how the latter influenced in the development of his football skills. However, in highlighting this issue of poverty, the point of interest is not about being poor to be able to play with ginga. Regardless of social class, the focus should be on the development of a football methodology that preserves the essence of Brazilian football style and at the same time makes it better by adding educational values to it. This issue has been addressed by my interviewee Medina as:

> The number of soccer schools in São Paulo has increased dramatically in the last 20 years. This is due to urbanisation which is taking away children's natural space for playing. As such, business minded-like people saw the opportunity to open soccer schools so children can continue to play football. However, the problem is twofold: the first is that not all children can afford to pay soccer school fees; the second is that the majority of these soccer schools are not methodologically prepared to coach children, and thus rather than developing them these soccer schools are in fact inhibiting children's football development skills. (Interview, February 10, 2011)

Reflecting on this issue, when I left Brazil twenty four years ago, there was no private soccer school in my home town Jundiaí. In 2011, there were more than 10 soccer schools that I personally counted during my research tenure. In further discussing this issue, Silva shared similar view as Medina. For him, "these emergent soccer schools are inhibitors rather promoters of skill development. That is, they do not have the right methodology to train our children to become good footballers in the future" (Interview, February 8, 2011). Indeed, this is an important argument to be considered as it is notable that there are fewer current exceptional Brazilian football players than there were in previous national teams. Further, most recently the seleção performed below the huge expectations of the fans in the Brasil Fifa World Cup, 2014, even though the team did make the semi-final of the competition only to be thrashed by a rampant German team (that went on to win the tournament).

To further discuss the issue of Brazilian football skills as a product of poverty, psychological factors such as motivation and determination enhance the perceptual motor skills of Brazilian players. Under this context, since football turned professional in the 1930s

and became a national sport, these lower social economic status players have seen football as a way of escaping poverty. As Didi, a Brazilian football superstar in the 50s, argued, "the boy who has an easy life doesn't have a chance in football because he doesn't know the value of a plate of food" (Manual do Atleta Inteligente, 2008, p. 47). This assertion is reinforced in the words of Vagner:

> "When I went to SPFC at the age of fifteen I was feeling like I was walking on a cloud. However, I must say that it was difficult to be on my own. I missed my family and friends a lot. On the other hand, I knew that it was the opportunity of my life. My mom was deeply sad when I left but I tried to cheer her up by promising this: "Soon I will be able to buy you a house". Years later when I got the money from my first contract, the first thing I did was to keep my promise to her. Subsequently, along the years I bought a house for each of my brothers and sisters. But you see, I had determination and motivation to overcome any obstacles because I knew how hard the dark side of life is when you don't have enough food on your plate. It is quite rare to see middle class players achieving what I have achieved in football. For instance, my son was quite a good footballer, so he was accepted to be part of the SPFC youth academy. Like in my youth days, he had to live in the dormitory of the club by which wasn't as near as flash as it is now. Today the training centre in Cotia where the youth players stay is a world class place. But do you think he managed to stay there? No, he couldn't stay there for more than two months. He had to come back to the comfort of his home, even though he knew that by doing so the dream of following the footsteps of his dad was over". (Interview, February 16, 2011)

This quote explains why the majority of football players in Brazil come from lower socio-economic status (see Dana, 2014). Players like Vagner's son have more options to successfully do well in life than merely by the means of football. As a result they do not have the motivation and determination for what it takes to become football professionals. In New Zealand, I coached a Brazilian player in the Otago University Association Football Club with a similar background. This particular player grew up playing for top youth teams in Brazil such as Cruzeiro and Flamengo. When he was eighteen years old he signed his first professional contract. By the age of twenty he gave up. He told me he lost his motivation and resigned when he was supposed to be loaned to a smaller club. Financially speaking my football player comes from a reasonably rich family who possess large land holdings in

Minas Gerais, Brazil. I wonder if his decision would be the same if his economic situation was not secured for the future? Thus, be it my player or Vagner's son, they were not the first, neither will they be the last players, who will not continue to pursue a football career due to a privileged economic status.

In further discussing this issue of poverty with Vadão, he offered a controversial point of view that is worth highlighting. In his view:

> Now, the better players are those from financially poor families. They are much more skilful and bold too in football. But I ask myself why? This is because they don't have rules at home. They go to other people's house and don't have manners. They act as they were at their own houses. They are not educated to be politically correct. So, as football players, when they go to play away, they do the same, that is, they play as they are playing at home. In my view, they are much more mentally stronger. The thing is, the poor children have so many other difficulties in life that when they play football they don't choke, they play like they are playing football for fun, regardless of the pressure. I say this based on my experience that I have acquired along my career as a player as well as a coach. (Interview, February 9, 2011)

As it can be seen, Vadão was quite radical in his thoughts about the reasons for poor children being resilient. He associated the idea that poverty is synonymous with bad manners and, in turn, with being mentally stronger. Regarding the former (i.e., the relationship between idiosyncratic mannerism and poverty), it is out of the scope of this thesis to further discuss on this issue. However, regarding the latter, (i.e., the relationship between poverty and mental strength) further discussion can add important value to this thesis.

With this in mind, a professional football player from Corinthians, Emerson, was interviewed before the final match of Libertadores Championship 2012 against Boca Juniors FC held at Bombonera in Argentina. Bombonera is the home ground of Boca Junior FC and those who follow football know how difficult it is to play against them at their home ground. Part of the interview proceeded as follows (Laurentiis, 2012):

> The reporter asked: Do you think you are going to feel any pressures to play at Bombonera against Boca?

> Emerson responded: I was born and raised in a very simple place, and saw things that maybe many of you (journalists) will never see. Dude, pressure is lying in bed being afraid stray bullets may hit your face, your chest, yes this is pressure. Playing in a packed stadium with new balls, perfect grass, etc, there is no room to feel pressure it is all about enjoyment.

Here Emerson explains the relativity of pressure on a football field compared to the violent environments he had faced. Indeed, Emerson did not choke in the game. He was one of the key players in that game including setting up the goal Corinthians scored to secure a 1-1 draw. Further, in the second leg game in Brazil he scored the two goals that made Corinthians the champions of South America.

My field work at favela Vila Ana can also provide relevant insights on this issue. For instance, returning to the previous example of the young boy facing up to the bigger one in an argument, this shows that children learn quickly to stand up for themselves to be able to survive in this kind of environment. Such an issue can be discussed from different perspectives. For instance, from a sociological point of view, poverty intersects with gender, and gender with sports. In this sense, masculinity equates with being strong and fearless which seemingly gives it greater credence and which in turn elevates masculinity to a hierarchical status in football (see MacLean, 1999).

From a psychological point of view, it can be argued that being fearless is about developing resilience and a certain mental toughness (see Rachman, 1984). But it does not mean that every child will grow up strong. In fact, research has shown that poverty in childhood may lead to higher risk of depression, substance abuse and other diseases in adulthood (see Costello, Compton, Keeler, & Angold, 2003). In addition, evidence suggests that growing up poor has long been associated with decreased educational accomplishment and lower earnings in lifetime. However, for those who receive some form of assistance, they are prone to overcome behavioural and emotional problems and in turn have a better quality of life in the future (see Velasquez-Manoff, 2014). With this in mind, it can be argued that

those socially deprived children who make the cut to be part of a federated football club may have the necessary assistance supporting their overall development, including mental toughness to play football anywhere at any level.

It is often the case that children from poverty stricken favelas do not have enough food on a daily basis. Many have parents who are unemployed and possibly are themselves drug users as pointed out by my interviewee Rodrigo. Under this context, I informally asked some of those children about their professional football aspirations and frequently their answer was about playing football for the love of the game, but also to improve their socio-economic status. Understandably, by seeing those Brazilian football superstars who made it to the top these children want similar lives too. As two children explained:

> Child A: I would like to be a professional football player to make enough money so I don't need to get involved in this kind of life style of using or selling drugs. My whole family played football, including my father. I love it.
>
> Child B: I love football. I would like to be like Ronaldinho (see these conversations on video clip "Conversation with Children" in the DVD attached in the Appendix section).

Based on the arguments described above, there is some indicative evidence that poverty can influence in a positive way the lower socio class children to become more motivated and in turn more skilful and expert in football.

Therefore, the underlying mechanisms supporting poverty on skill can be directly linked to the other layers of Bronfenbrenner's contextual system such as the micro and exosytems. For instance, poor children tend to put less effort into education and have more freedom to play pelada. This is under the informal learning environment that we have discussed above. They also tend be more motivated to use football as a stepping stone to improve their socio-economic status. Furthermore, arguably they tend to be mentally stronger to cope with pressure of the game.

Hence, poverty can be a constraint for skills development, yet my data also indicate complexities to this situation. For instance, how about those children who do not make the cut to go to federated clubs? What are the hopes and opportunities for them to do well in life? Can they transfer their learnt principles of sport to other aspects of life? No doubt, this issue of poverty and any other socio-cultural constraints affecting the perceptual motor skills of Brazilian players has to be further investigated. My hope is that through this chapter I can provide insights that can prove foundational for future research.

5.7 Summary

In this Chapter I have discussed some of the socio-cultural constraints that have influenced the development of perceptual-motor skills of Brazilian football players. I proposed the use of Bronfenbrenner's bioecological framework to organise the emergent data which includes pelada, home, federated clubs, and poverty. These constraints were respectively categorised under the micro-, meso-, and exosystem of Bronfenbrenner's bieocological model.

In the history of Brazilian football pelada has provided the stepping stones for football specialisation. Other systems such as home and federated clubs are also crucial on the development of Brazilian players. For instance, while a club can provide excellent coaching programmes the success of players can be facilitated with family support. Besides, many children in Brazil live in poverty and therefore have to draw upon whatever physical means they have to play. Having had less focus on education and more emphasis on playing pelada, these children tend to become very skilful. Arguably, the underprivileged living conditions develop psychological fortitude and motivation to improve their socio-economic status.

In interpreting this issue, the constraint-led approach plays an important role on explaining the theory underlying this empirical research. As I have mentioned earlier, perceptual motor skills emerge from the interaction of key constraints such as task, individual

and environment constraints (Davids et al., 2008). It is a common misconception with regards to the constraints model that the constraints only serve to restrict developmental opportunities (i.e., that they serve only to restrict movements whereas in fact they also enable movement to occur). Whereas some might perceive the blend of constraints identified in this chapter as negative or aversive to overall learning and development, in fact the data suggest otherwise. For instance, Brazilian footballers have to develop strong personalities to play well, Brazilian coaches have to wisely manipulate task constraints focusing on discovery and effective learning, and many physical environment conditions common to Brazil such as irregular surfaces, high temperature, and small and deteriorated playing space can be seen in pelada. In addition, this research has shown that not only physical environment constraints affect motor skills but also the socio-cultural ones evidenced under the contexts of pelada, family and club support, and poverty.

Therefore, it can be concluded that unconventional, even apparently aversive socio-cultural constraints play an important role on the development of expertise of Brazilian football players. As a result the constraints led approach can now be elucidated further and in turn enrich the knowledge of sport skill acquisition literature. However, to further the issue, a diversity of other socio-cultural constraints has to be considered. On this note, in the next Chapter I will continue my analysis but with emphasis in delineating socio-cultural constraints that fit the macrosystem of the bioecological model.

CHAPTER 6

The Role of Macrosystem Socio-Cultural Constraints on the Development of Brazilian Footballers

6.1 Introduction

In sport, little is known about the role of macro level environment contexts on long term expertise development (Araújo et al., 2010). This includes the lack of knowledge on how socio-cultural mores influence the development of football expertise of Brazilian players. For different purposes, several studies in the social sciences (e.g., Caldas, 1986; Caldas, 1994; DaMatta, 1994; Filho, 2003; M. A. Filho, 2006; Helal, Soares, & Lovisolo, 2001; Lopes, 2007) have analysed Brazilian football. Of most direct relevance to this thesis is the work of Gilberto Freyre, a Brazilian sociologist, anthropologist, historian and writer who has an important role on disseminating the notion of racial democracy via his most seminal work: *The Masters and the Slaves* (see Freyre, 1986). As highlighted in the introductory chapter of this thesis, it is with Freyre that the sociological analyses of Brazilian football started in 1938, and in turn, it is with his analyses that the notion of a national football style began (see Maranhão, 2007). Whilst Gilberto Freyre's work was not focussed upon the issue of expertise development per se, his seminal analysis and writings have important implications for this topic.

As a social critic, Freyre's analyses of the socio-cultural and historical formation of Brazil were typically underpinned by a theoretic-methodological approach in which macro-sociological phenomena were directly linked with reference to the people, the micro level of society (Morais & Ratton, 2011). In relation to football, for instance, Freyre referred to mulatto and black players' such as Leonidas da Silva, Garrincha and Pelé's ethnicity (i.e., micro level), to demonstrate how their historical-cultural traditions influenced other sociological phenomena such as the Brazilian football style (i.e., macro level). Under this context Freyre says:

> It is interesting to observe that – many years after the violent repression to such Africanisms (drummers, samba, capoeira, etc) – the descendants of the dancers of razors and knifes are now sublimating their dancing on the ball, that

> is, foot-ball, as noticed in our dionisic players such as the back Leonidas... (Freyre, 1951, pp. 881-882)

Later, in an interview that was only published after his death, Freyre singled out the footballer Garrincha as the symbol that best represented his idea of dionisic Brazilian football:

> Garrincha had moments of a dancer in the field. Indeed, there were moments that Garrincha danced on the ball more than Pelé. And it was with his bent legs as he was almost a maimed. You see, the game started from an elitist Britannic background. Then in a magnificent transition that honours Brazil, it turned into almost contrary to the original one. It turned into a game of mobility, creativity and open for improvisations. It became a popular game based on the character, temperament and vocation of Brazilians (Aragão, 2000).

Therefore, by seeking the roots of black culture represented by black and mulatto players, Freyre explains the emergence of the Brazilian football style. In his view it is a dionysian way of playing (i.e., with dribbling, ginga, dance, and flamboyance) in opposition to the European apollonian style (i.e., rational, methodical, planned, angular). In the texts already highly cited by different authors (e.g., Barretto, 2004; Maranhão, 2007; Morais & Ratton, 2011) Freyre endorsed his Dionysian theory as a way of cultural representing Brazilian society and explaining the reasons for its uniqueness and triumphs in football. For instance, Maranhão (2007) highlights two of these passages written by Freyre:

> In football, like in politics, Brazilian Mulatism has become known for its taste for flexion, for surprise and floridness which reminds one of dancing and capoeira steps, particularly dancing. Dionysian dance. A dance which allows improvising, diversity, individual spontaneity. Lyrical dance. While European football is an Apollonian expression of a scientific method and socialist sport in which personal actions are mechanised and subordinated to the whole, the Brazilian is a sort of dance, in which the person is prominent and shines. (p. 515)

> After publishing my first notes on these two subjects – the regional ways of dancing and playing football, football still being a dance with something African – I have read an excellent page by Waldo Frank, where he thinks of Tango as a 'sculptural dance-music'; and, at the same time he says that, observing a group of Brazilians playing football, he noticed that they tried to score as if they were playing 'the melodic line of samba'. He has almost

> reproduced the very same observation I once made in an article of mine in 1938, and I am sure that Waldo Frank had never read it...(p. 516)

Although it is beyond the scope of this thesis to discuss racial discrimination, it can be seen a kind of unintentional racism in Freyre's analysis where he makes assumptions about apparently innate abilities of others based on racial stereotypes. Accordingly, Maranhão (2007, p. 516) asserted that Freyre's analysis points to the fact that "…the black was considered to be naturally talented in music, dancing, wrestling, and of course, football. …The power of reasoning, of reckoning, calculus and coolness, obviously did not fit in his praise of the African element. It was typically European". Racial discrimination apart, the argument of interest here is that the ability of blacks to perform well in music and sports was not merely a result of their *natural talent* as stated in the quote above, but rather their style and favoured bodily movement emerged as a product of the socio-cultural environmental constraints (see further discussion about natural talent later in this chapter). As such, under the view of ecological dynamics Freyre' analysis fits the notion of discovery learning and self-organisation (see Davids et al., 2008). In practical terms, this implies that rather than having been trained under a rigorous tactical and disciplinary regime, the mullato acquired skills within the freedom to explore the environment in a playful, enjoyable, and self-organised way. The result is the dionysian way of playing as celebrated by Freyre (see Barreto, 2004; Maranhão, 2007).

Following up Gilberto Freyre's reasoning, this chapter analyses the macro level the socio-cultural environment constraints influencing the development of football expertise. Similar to Chapter 5, data for this chapter emerged from the ethnographic work done in New Zealand via document analysis, and in Brazil through participant observation and interviews. The process of coding and categorising the data followed also the principles of point of saturation and rich information (see Chapter 3 for further details).

6.2 Results and Analysis

Drawing from my data analysis, the findings lend further support to what has been postulated by Freyre since 1938. That is, the Brazilian football style emerged from the influence of socio-cultural mores of the black and mullato people that infused the 'democratisation' of the game. These socio-cultural constraints include samba, capoeira, and malandragem. To discuss this issue, I will next contextualise samba and capoeira in order to inform the subsequent analysis. Later in the chapter, malandragem will be detailed in a similar manner.

6.2.1 Samba

Samba is a Brazilian dance and musical genre full of rhythms accompanied by melodic phrases and choruses. Rooted in Africa, samba emerged in Bahia, Brazil, via the West African slave trade and African religious traditions such as Candomble. The Bahian Samba de Roda (dance circle), became a UNESCO Heritage of Humanity in 2005 (see Sotckler, 2011). While today samba exists right through Brazil it is most often known as a musical manifestation of the city of Rio de Janeiro. It was in Rio that the dance performed by former slaves who migrated from Bahia was combined with other musical genres such as the polka, the maxixe, the lundu, and the xote. As a result a Brazilian samba style was developed and subsequently, with the support of the then Brazilian President Getulio Vargas samba schools were first formed in 1930 (see Salomão, 2014). Since then, samba schools compete annually in the Carnival with thematic floats, elaborate costumes, and original music (see Figure 9). Considered one of the most popular Brazilian cultural expressions, samba has become an icon of Brazilian national identity. Internationally, samba has been recognised worldwide as one of the symbols of Brazil (see Vianna, 1999).

More than dance itself, samba brings a culture of food, parties and flamboyant clothes. There is also a great tradition of ballroom samba in Brazil where the moves and

identity of this dance was shaped leaving behind its African's origins and influences (Salomão, 2014). Regardless of the language and culture, samba has been successfully diffused around the world. In Europe for instance, there are hundreds of samba schools scattered among countries including Germany, Belgium, Netherlands, France, Sweden, and Switzerland. On the other side of the planet, in Japan, they have their annual carnival called "The Asakusa Samba Carnival" which attracts 500, 000 visitors each year (see Spacey, 2014; Yamasaki, 2013). Notwithstanding that globalisation, samba is frequently associated with other Brazilian loci of national identity such as football (see further details on this issue below).

Figure 9. Mangueira samba school parade in the 1998 Carnival in Rio de Janeiro.

6.2.2 Capoeira

Capoeira is a Brazilian martial art that incorporates elements of dance and music (Downey, 2005; see Figure 10). A large number of theories explain its history, with much controversy over whether capoeira began in the African continent or amongst African slaves in Brazil.

Such debate is mainly due to the lack of historical documentation between the 16th century and the early 19th century (Downey, 2002). The dance and music were incorporated to disguise slaves' main intention of practicing fighting techniques to get stronger and try to escape. If they were caught practicing those techniques, they could be punished or executed. So, with music and rhythmic moves incorporated into their training, they raised no suspicion of escape attempts. Escaped slaves gathered and established primitive remote settlements called quilombos. Life in a quilombo offered freedom and the opportunity to revive traditional cultures away from colonial oppression (Câmara, 2009).

After nearly 400 years, slavery was abolished in Brazil in 1888. However, without any form of support, no job, no education, nowhere to live, and despised by Brazilian white society, which usually viewed them as lazy workers, free former slaves felt abandoned. In order to survive, some used their capoeira skills to become bodyguards of criminals and to fight against the authorities. For that, the government imposed sanctions and capoeira could no longer be practiced, but after a period of prohibition, capoeira started to grow again in the 1920s and has continued until now (see Melo, 2007).

In relation to technique and skills, *ginga* (literally: rocking back and forth; to swing) is the fundamental movement in capoeira whether for attacking or defence purposes. On one hand, it serves to keep the *capoeirista* in a state of constant motion, preventing him or her from being a still and easy target. On the other hand, it can be used to mislead, fool, trick the opponent with fakes and feints, leaving them open for an attack or a counter-attack (see Downey, 2008). Under this context, capoeira is played with ginga, and ginga encompasses an element of trickery which in turn represents the notion of malandragem (cunning). Malandragem is another distinctive element of Brazilian culture (see more below). In summary, ginga with *malandragem* in capoeira is the ability to quickly understand an opponent's aggressive intentions, and during a fight or a game, fool, trick and deceive

him/her. Capoeira is now a symbol of Brazilian culture and a source of pride regarding resistance to oppression. Moreover, capoeira has become an active export of Brazilian culture all over the world (Melo, 2007). Like samba, capoeira has also been associated with football.

Figure 10. A group practicing capoeira at Salvador beach in Bahia, Brazil.

6.2.3 Samba, Capoeira, and Football: Interactive Dimensions

Samba and capoeira are typical Brazilian dances and any form of dance is considered to be performing and is represented by bodily expression usually influenced by culture and driven by creative and improvised impulses (see Nora, 2010). Such kinds of artistic expression concerns performing in front of audiences who act as the judges of the show. While football is a sport, many metaphors created around Brazilian football are related to the notion of arts, for instance, the football-art. Just like artists Brazilian football players enjoy exhibiting their skills to entertain the public and at the same time to be recognised and praised for their performance. Mario Filho noted the exhibitionist behaviours of Brazilian players via the

attitude of the black and mullato who loved entertaining the supporters with flamboyant skills (see Filho, 2003). This attitude would be admired, even encouraged by fans who thought that football should be played with joyfulness and full of dribbling and tricks (see Laurence & Torres, 2014).

However, the question of interest is: Do samba and capoeira influence the development of expertise of Brazilian football players? To lend further evidence in this issue I once again refer to my ethnographic study. For instance, during my field work in Brazil in 2011, it was evident that the relationship between dance and football was as strong as it was in 1938. Ranging from supporters, artists, and TV commercials, to players themselves, samba is often related to their football affairs. For instance, the fans of any football clubs always support their teams in the rhythm of samba (for an example, see video clip "Copa São Paulo" in the DVD attached in the Appendix section). Moreover, numerous TV-commercials have textualised and contextualised the notion of samba with football, as I outlined in Chapter 1 via the examples of the Nike and the Penalty enterprises. In addition, it is common to see Brazilian players celebrating their goals with dance, especially with samba (e.g., trademark post-goal celebrations of Ronaldinho and Neymar). Finally, the relationship between football and samba is well recognised and regularly conveyed in the media, especially with the constant presence of players in the parades of the samba schools of Rio de Janeiro. Players like Junior, Zico, Romário, Edmundo and, more recently, Ronaldo and Ronaldinho constantly attend events in the city (Cabo, 2012).

To further add context to this issue, I had the opportunity to talk to and film a street-artist performing football juggling on the top of a barrel at a traffic light in the middle of São Paulo city. Not surprisingly, in exhibiting his football skills he also performed the footstep of samba (see video clip "Street Football Performer" in the DVD attached in the Appendix section). More evidence on this issue can be seen from the conversation I had with my

interviewees. For instance, for Mike, pagode (a version of samba) is his favourite type of music. Despite being of white ethnicity, he began to appreciate pagode when he came to live with other youth players at Paulista FC at the age of thirteen. He said: "when I came to live at Paulista everyone was listening to pagode, so I did it too and now I like it a lot". Other interviewees such as Daniel and Rafael have also stated their preference for this kind of music and dance. However, although not all interviewees talked about their musical and dance preferences, my data shows that with exception of two interviewees (see further details below) they all believe that socio-cultural factors such as samba and capoeira influence the development of expertise of Brazilian players. Some of these conversations are demonstrated below:

> (Luiz – Vagner)
>
> Luiz: It is clear by now that the social-economic factor such as poverty has positively influenced you psychologically, technically, and so on. Now, the Brazilian way of playing, do you think they are unique and if so, what are the factors that influence such high level of skills?
>
> Vagner: I see it in this way: we Brazilian have capoeira and samba. Both give a sense of space and time in which our body explores the situation with ginga. I grew up seeing my oldest brother playing capoeira. I used to see him training that sway (ginga) of pretending to move to one side but going to another. Capoeira gives a sense of improvisation all the time. Such features are then transferred to our football. That is why we play the way that we play. It is still unique. (Interview, February 16, 2011)

Here, Vagner posits that Brazilian football style is unique in a sense that players explore space and time with ginga and improvisation, which are features transferred from samba and capoeira. By seeing his older brother playing capoeira, he implies that learning can be achieved by observation. In this sense, there are many Brazilian players who may have never played capoeira or have never danced samba, but they may have acquired similar skills by training and copying from others who play with ginga. Therefore, rather than be constrained by over structured tactics, the key of Brazilian football style is about controlling the rhythm

of the game and to improvise according to the game situation. On this note, another interviewee emphasised the importance of rhythm in Brazilian football as below:

> (Luiz – Daniel)
>
> Luiz: As the history has shown, the African-Brazilians have massively influenced our culture at different levels. In relation to football what is your view on that? I mean do you think that the Brazilian style of playing has been influenced by the Brazilian-African culture?
>
> Daniel Bocatios: I have no doubt about that. When you play capoeira, you work a lot on the body movement coordination. In Brazil we play a lot of capoeira which is a form of dance. But as you know, in Brazil we have different rhythms of dance. I personally love dancing samba. I think all Brazilian plays under the rhythm of samba. But from samba we go to pagode and from there to baiana music and so on. All of these different rhythms provide opportunities for the enhancement of movement body coordination. As you know, rhythm is very important in football. Within that we learn how to deceive the opposition with our body. (Interview, December 12, 2010)

It is important to pay attention to the fact that while the ginga style became a popular term amongst Brazilians (see Barretto, 2004), it has to be highlighted that this generalised idea has its degree of complexity, because not everyone plays with ginga. In this regard my interviewee Vagner agrees that the Brazilian style has been influenced by socio-cultural phenomenon such as samba and capoeira, but he also sees that it cannot be generalised to every Brazilian. In his words:

> The Brazilian way of playing with ginga is a cultural phenomenon. It is part of our tradition. Having said that, it is not because he/she is Brazilian he/she has samba on the feet. Likewise, it is not because he/she is Brazilian he/she will have a high level of perceptual-motor skills to play with ginga. (Interview, February 16, 2011)

Silva also sees the socio-cultural influence on the Brazilian style. However, such a style was not his personal way of playing. Although he was a very skilful player, his approach was more about passing and distribution. For him, the ginga style is for the dribblers. He noted:

> Ginga is inserted into samba and capoeira. We Brazilians have such a large mixture of socio-cultural affairs. Such cultural mixture led to the development of happy, outgoing and creative people. However, in my case I was not a dribbler. I think samba influence players who tend to be more individualist; the dribblers. (Interview, February 8, 2011)

Freyre also mentioned this issue and use Domingos da Guia to exemplify the case:

> Capoeira and samba, for example, are present in such a way in the Brazilian style of playing football that a player somewhat cold as Domingos, admirable in their way of playing but almost without flourishes - the baroque flourishes that Brazilian like - a critic of the shrewdness of Rodrigues Filho can say that he is for our football as Machado de Assis is for our literature, i.e. the status of a kind of English strayed among tropical. In modern sociological language, in a situation between Apollonian and Dionysian (Freyre, 2003, p.25. Emphasis in original).

Here, Freyre asserts that Brazilian football style is a function of samba and capoeira, albeit some players like Domingos did not fit the typical stereotypical Brazilian way of playing. For Freyre, Domingos's style was closer to the English apollonian football with little room for creativity and improvisation.

In this regard, it can be argued that the issue is not about arguing that the ginga style is universal to all Brazilian players, but that all Brazilian players are universal to ginga style. That is, given that ginga has become a locus of national identity, and in turn recognised worldwide, it has almost become natural to assume Brazilian footballers all play with ginga. While this is not the case at individual levels, it can be argued that in universal terms there is a social agreement about the issue. As such if something is believed to be real, if it is widely accepted and celebrated as the national footballing style, it will be real in its consequences. This is in line with the philosophical assumptions of the interpretative paradigm, as discussed in Chapter 3, which states that a phenomenon passes to be valid, meaningful and true when a social agreement exists. I argue that this is the case of the Brazilian football style. Critically, it can be considered a socially constructed idea which can then be self-fulfilling.

Interestingly, I found that some of my interviewees believe that the development of Brazilian skills, especially the dribbling, is a purely innate skill rather than has been shaped by the environment. For instance, in discussion with Zé Sérgio:

> Luiz: Zé Sérgio do you think socio-cultural factors such as music and dance contribute to the development of skills of Brazilian players?

> Zé Sérgio: I don't think so. I think that dribbling does not belong to the basic skills of football such as passing, finishing, heading, etc. Dribbling is something innate, you can't teach it. That natural dribbling of Brazilian, it is innate, you are born with it.
>
> Luiz: But you mirrored or learnt from someone?
>
> Zé Sérgio: No it was natural for me. My idol was Rivelino but his playing style was different than mine. If we had to compare my dribbling with a current player, I would say that my dribbling is similar to Lucas dribbling which is a dribbling with velocity, strength and power. It was more objective. Now we have that kind of dribbling which perhaps embraces better this idea of Brazilian style of playing.
>
> Luiz: Let's say Ronaldinho dribbling?
>
> Zé Sérgio: Yes Ronaldinho has a dribbling that demands a lot of skills. But this is something that is natural of him. He was born with it. There are also two new young players today that can be used as examples. For instance, I compared Neymar and Lucas. Neymar has that typical Brazilian way of dribbling with ginga which demands a lot of perception-motor skills. On the other hand, Lucas is more objective. His dribbling is based on velocity and force. (Interview, February 23, 2011)

Mike also shares a similar point of view:

> Luiz: In relation to arts and music, what type of music do you like?
>
> Mike: Pagode (a version of samba). I love pagode. When I came to live in this club I was influenced by my peers to listening to pagode music.
>
> Luiz: Is pagode different than samba? Can you dance samba?
>
> Mike: Yes, it is a little bit different. Although I prefer pagode, I like samba too. I learned how to samba here with my team mates.
>
> Luiz: Mike you are a striker who has a good level of motor skills. You can dribble well and score goals. Do you think music and dance has influenced the way that you play or the way that you dribble?
>
> Mike: I don't think so. I think I was born with it. (Interview, February 21, 2011)

The view of both Zé Sérgio and Mike raise the classical debate about nature and nurture, within which, without a thoroughly analytical investigation, some people tend to anecdotally and simplistically favour the nature factor without consideration to the nurture factor. However, studies have shown effects of interacting constraints on the development of

expertise performance, despite variations in genetic structure, since high heritability of particular traits is clearly influenced by environmental components (see Davids & Baker, 2007).

In spite of the facts, many clichés around Brazilian football have been created. A classic example that is commonly heard in Brazil is this one: football can't be learned, you are either born with it otherwise you can't play it. In line with this, Medina pointed this issue out during his interview:

> The question is: we can conceptualize Brazilian football, but we do not stop to analyze the Brazilian football without some platitudes. For example, "here is the country of football." I tend to reflect on this issue and ask myself: Is Brazil really the football country? There are other countries such as Turkey and Saudi Arabia where football is encased in a huge fanaticism, of course, within the characteristics of their own culture. So, in considering these issues in a superficial manner, platitudes will always take place. Thus, to further enrich the level of football in Brazil a deeper analysis of Brazilian football is necessary. (Interview, February 10, 2011)

With this in mind, a deep analysis is what this chapter is aiming toward in order to explore how expertise development involves more than innate capabilities but also, encompasses external constraints, including the socio-cultural contexts of a national culture. The commentary offered by Davids and Baker (2007) suggests that the development of expertise is influenced by interacting constraints, despite variations in genetic structure. This supports the principles of the ecological approach, within which, individual traits are shaped by environmental constraints such as those ones postulated by Bronfenbrenner's model: process, person, context and time.

Under this scenario, the dribbling skills of some Brazilian players are not solely a consequence of genetic traits, but adaptations in evolutionary dynamical interaction between individual and environment, within which, both contribute equally to the development of dribbling expertise. This line of thought serves also as a parameter for me to say that the overall discussion of Brazilian football style is not the result of genetic traits of the black and

mulatto players, but instead, it is a result of the influence of the socio-cultural mores of the black and mulatto players, as described above.

In summary, evidence shows that samba and capoeira are strongly influential macro constraints, although some players/coaches such as Mike and Zé Sergio did not recognise their influence. For them, the ginga of Brazilian players is something utterly innate. Such beliefs can be common in a society where mysticism and clichés have powerful values. On this note, one of the clichés that has negatively influenced many football practitioners is "football can't be learned, you have to be born with it", as asserted above by the interviewee Medina. As evidenced by a large body of related research in skill acquisition, the effect of environment is crucial on shaping skill expertise (see Davids & Baker, 2007).

In addition, it is also important to note that players do not necessarily need to actively practice either samba or capoeira but, due to the fact that these socio-cultural constraints are so richly perfused in Brazilian culture one simply cannot avoid being touched in some way by them. On this note, although our data shows a strong relationship between socio-cultural constraints such as samba and capoeira and football, it does not necessarily means that all players can dance samba or play capoeira. The fact that dance is culturally embedded in Brazilian society, means it is possible to say that players can learn from each other, thereby dissipating the ginga style of playing.

To conclude this section, I would like to further clarify the notion of samba and capoeira by briefly highlighting some of their contrasts and similarities. The main difference is that samba is a specific genre of music and dance whereas capoeira is a kind of martial-arts. However, due to the peculiar type of rhythm and movements, capoeira is also referred as a kind of dance (see Downey, 2008). Samba is usually played with percussion instruments such as drums and tambourines (Hardcastle & Preston, 2008). In contrast, berimbau (i.e., a gourd-resonated, braced musical bow) is the main instrument required when playing or

dancing capoeira (Nikolova, 2009). On the other hand, the main similarity between samba and capoeira is the "*jogo de cintura*" required to perform these activities. Literally, jogo de cintura can be translated from Portuguese to English as the "game of the waist". This literal meaning can be directly applied to samba, as the frenetic movement of the hips is the key to perform the dance well.

However, beyond literal meanings, jogo de cintura is also a colloquial term often used as a metaphor to express resilience to overcome any difficult situations in life (Navarro, 2013). In this sense, jogo de cintura in capoeira is equivalent to the technique of ducking and diving used to survive the tricks that the game of capoeira promotes. With this in mind, it can be said that both, the literal meaning and the colloquial term of jogo de cintura is the point of articulation between samba, capoeira and football. In other words, the Brazilian style of playing football requires flexible hips to apply deceptive dribbling demanding at the same time quick, wise thinking to find solutions and to make smart decisions in different game situations (see Delamont & Stephens, 2013). In further interpreting the meaning of jogo de cintura, it is possible to identify jogo de cintura within the notion of ginga which in turn can be linked to the idea of malandragem, which will be explained next.

6.2.4 Malandragem

A further finding indicates "*malandragem*" as a socio-cultural constraint that has influenced the Brazilian way of playing. Malandragem is a noun in the Portuguese language that, literarily, translated to English means cunning. The adjective of malandragem is malandro, which in English means a trickster in a way of being a streetwise person or a person who possesses cunning as well as malice (Whitlam et al., 1991). Therefore, in Brazil men who use 'street-smarts' to make a living are called *malandros* (see Figure 11). Eventually the meaning expanded, indicating a person who is a quick-thinker in finding a solution for a problem (see

DaMatta, 1984). The construct of *malandro* lifestyle has become significant to Brazilian national identity as a folk hero, or, rather an anti-hero. As such, it is common to see malandragem as a theme in Brazilian literature, cinema, music, and in sport, especially football. To this end, "malandragem is one of the most traditional socio-phenomena in Brazil" (G. Rocha, 2006).

The history of malandragem can be traced back to the 1880s when slaves obtained their freedom. Traumatised from years of slavery, and impoverished many of these individuals abdicated from regular work and were drawn into the world of crime. Some accepted jobs for poor wages, but without qualifications and place to stay, ex-slaves were ignored by the public and were pushed to the outskirts of cities, forming the first favelas. Living under such conditions, these individuals found their means of expression in the lyrics of samba (samba malandro) with words that criticized the system. Hence, since the early days of Republic being malandro can be considered a form of resistance in Brazil (see Cabral, 2012; Gomes, 1999).

With President Vargas in power, however, the samba malandro was prohibited due to its potentially negative influence on Varga's ideology. To supress the samba malandro Vargas' government promoted the "*samba exaltation*", which always pointed to the greatness of the country and the advantages of working honestly (Gomes, 1999). However, due to a range of socio-economic complexities and struggles such as corruption, unemployment and inequalities, malandragem gained traction as a way of socio-navigation and as a tool for individual justice. In other words, by living under constant oppressive forces, the individual malandro had to manipulate people, deceive authorities and bypass laws in order to survive and guarantees his well-being (see DaMatta, 1984). But, despite this apparently egocentrically, lying and malicious nature, the person who uses the *malandragem* is not necessarily regarded as selfish, but may be acting to provide for the people around him. The

person that uses *malandragem* to take advantage of another person is motivated to find their way out of an unjust situation even if this means sometimes resorting to illegal methods (see Cavalcante, 2005).

Often, malandragem is employed as an intellectual resource by individuals of little social influence or the socially disadvantaged. In this sense, the trickster figure would be the Brazilian mulatto who overcomes prejudice and manages a certain social mobility through favours conquered with ginga (Schwarcz, 1995). A popular Brazilian saying that best summarises this idea of malandro is: “I like to get an advantage in everything”. Such a slogan was immortalized in a catch phrase of former Brazilian soccer player Gérson de Oliveira Nunes in a cigarette TV commercial (see Gurovitz, 2004). With this in mind, when malandragem is used to take advantage in a way that harms others, then it connotes a negative image of the malandro, who is then popularised as anti-hero. However, when the individual malandro uses malandragem as a tool for justice against the corrupt socio-political system, which indulges the rich and oppresses the poor, then the malandro is portrayed as a typical Brazilian hero.

Under this context, the popularity of malandragem increased and was eventually embraced by the bourgeoisie or by those of better social positions, becoming therefore, a locus of Brazilian national culture (see G. Rocha, 2006). Culturally, the notion of malandragem is not an isolated phenomenon. Rather it is a popular culture that is related to those already mentioned: samba, capoeira and football (Bruhns, 2000). For instance, carnival, which is a "naughty" [malandro] party, is celebrated with samba full of ‘cheeky’ movements. In capoeira, malandragem is closely linked to ginga in which the game of malandro is not imposed by force, but by the ability to deceive the opponent. Now in football, being malandro is almost a must, since the adjective is associated with shrewdness and skills (see M. A. Filho, 2000).

Under these scenarios, the malandro is typically a popular hero. He is cheeky and ownerless, meaning playful and free to express his happiness; free to use his skills and tricks under the rhythm of samba, or the sound of a birinbau in capoeira, or under the chanting of enthusiastic football supporters. On one hand, his predictability is only imposed by the order and rules of the game, but when looseness and liberty are offered, malandro players are unpredictable and free to create and improvise, to take risks, to perceive the opposition's intention and act accordingly, be it in samba, capoeira or football.

6.2.5 Malandragem and Football: Interactive Dimensions

Under the context of football alone it is important to note that being malandro can foreshadow not only a positive impression (hero) but also a negative impact (anti-hero). In other words, Brazilian players are famous for striking both sides of malandragem. For example, Carlos noted:

> There is a thesis Luiz, defended by a teacher who talks about the whitening of Brazilian football. In this thesis the author says: "Football is a lie". Why is football a big lie? Because you create game situations where you want to go out to one side and come out the other side. You make your opponent think you will do something and you do something else. That is what you can call maladragem or malice in a positive sense. However, if on the one hand the Brazilian takes advantage of this positive trickery, on the other they screw up by trying to take too much illicit advantages like simulating a foul. So the Brazilians have a lot of it. As such, being malandro can favour both positively in their skills, but negatively regarding fair play and ethics. (Interview, December 31, 2010)

In highlighting this issue, Carlos indicates that being malandro in a positive way is about using perceptual-motor skills as a strategy to deceive the opposition. On the other hand, being malandro in a negative way is about promoting a misleading situation in order to get an upper hand in the game. Similarly, Guterman agrees that malandragem is about deceiving the opposition with skills; it is about being unpredictable. In his view, this is what makes football special. He argues:

> The fact is the passion in football is the passion of seeing players playing under the characteristics of Brazilian football style; of taking the risks of doing something new or unexpected to overcome the opposition or; of breaking the rules without being noticed. The game is always hierarchical in a sense that it will always have a team that is stronger than the other, as in life. Thus, if one uses lawful means or not to deceive, including deceiving the referee, it is ok as it is part of the game. In this case one is so malandro that even the referee could not see any form of infractions. (Interview, February 8, 2011)

Here, it is interesting to note Marcos' point of view about illicit tricks. In his view, being malandro, even in an illicit way, is just part of the game. Arguably, such sport behaviour would be more acceptable in Brazil, where they have been historically influenced by the malandro culture in which *getting advantage in everything* can be seen as synonymous with being smart, as noted above. To reinforce Guterman's position, Mr Trama provided a similar point of view:

> Brazilian players are malandros in a sense of taking advantages to play an attacking form of football and score goals. Pelé, Garrincha and many other great players used a healthy malandragem. I mean, it is about take advantages of certain playing situations without necessarily harming the opposition. However, some of the actions could be considered illicit in the eyes of the referee but the key is to do so without been caught. For instance, after been severely hunted with fouls by the opposition in the 1962 World Cup, Pelé gave an elbow stroke in the face of the adversary. The referee did not see it so he kept playing without receiving any form of punishment. However, I must admit that the problem is Brazilian players tend to exacerbate their actions, for instance, with too much explicit simulation of fouls inside the penalty area. The Europeans are more serious in this regard, but for us Brazilians, such simulations without being caught by the referee may be even considered a show apart in football. (Interview, January 7, 2011)

This issue is controversial and perhaps a topic of research on its own. However, in interpreting Mr Trama's comments, it can be said that malandragem is culturally based and what serves as a *'show apart'* in Brazilian football is a disgrace in other places. In this regards, historically the Europeans seem to prefer the notion of fair-play (presumably a legacy of the British upper classes who first initiated the sport) rather than being sneakily deceptive for self-gain.

In continuing with this topic, Vagner provides a revealing comment in which he connects the notion of malandragem with rapid thinking, anticipation, and space and time. He argues:

> I lived in a very rough neighborhood full of crime. We played pelada every day on the streets. We had players at various level of skills as well as age (e.g., between 6 and 18 years old). I was about 6 years old. So everybody knows that football has 17 rules, but in our street there is only one rule: if no blood no foul. Under this context you create certain malice [trickery] for the rest of your life. For example, I knew that if I bumped into a 15 year old boy I would break myself up, so I had to look over my shoulders all the time and anticipate the moves to avoid physical contact. In doing so, you develop quick thinking and the notion of searching for space and time to play. Given that the number of players was always very high with a lot of teams, we had to play as if it was a World Cup final. We had to win as if not we had to wait for an hour or so for our turn again. (Interview, February 16, 2011)

Here, Vagner reveals how his malandro emerged as a necessity within the context of the pelada games he played in his youth – as a matter of self-preservation and to avoid injury he was forced to act and think with speed and guile. Yet, under this context of malandro, the text below provides a further point in which the mischief (malandragem) of others creates an opportunity for Vagner to train his perception and attentiveness in relation to other parameters in the field:

> I was the youngest, my father was killed when I was a baby and my mother was a cook at the neighborhood school. She worked 14-16 hours a day. So we were very poor. My mom used to make our shorts out of those big cloth bags of sugar. It was the biggest reason for mockery. Sometimes when we were playing football my mates tried to lower my shorts down because I was not wearing underwear. So I had to stay alert all the time looking around. (Interview, February 16, 2011)

Here it is interesting to note that malandragem is related to poverty, which in turn was the reason for the appearance of malandro as explained above. In addition, other characteristics of malandragem can be viewed from the quote above. For instance, Vagner's friends were malandro by being cheeky in trying to lower his shorts and make fun of him. On the other hand, Vagner used his malandro skills to find a solution to the problem by looking around all the time. During the interview, Vagner provided another point that is worth highlighting. For

him, a malandro uses ginga to sway from one side to the other in order to deceive the opposition. Ultimately, it is a skill of perceiving, acting, creating and improvising on sport. Hence, Vagner articulates ginga, malandro, perception, and improvisation all together, arguing:

> In my view, ginga is synonymous with improvisation. I don't know if you think like me, but when you see someone playing we can say he plays with ginga or not. But ginga is not only about the way that one executes movement, it is also about astutely perceiving what is going on around. It is about being smart and cunning enough to anticipate what is going to happen and make decisions accordingly. Therefore, based on these parameters I can say that ginga is synonymous with improvisation. (Interview, February 16, 2011)

From a socio-cultural point of view, it can be argued that Vagner's statement represents the "good malandro" who is "smart and cunning enough" to find rapid solutions in different game situations. It is worth emphasising that being cunning to achieve a task goal seems to be, to a certain extent, acceptable in Brazil even under the means of transgressing established set of rules and norms. On this note, Soares (1994, p. 8) asserts that the ideal type of malandro reflects a contradictory existence within the individual who oscillates between law and transgression. As discussed above, such behaviour can be explained by the fact that malandragem has become a locus of national identity and it is omnipresent in different Brazilian socio-cultural domain, including football.

While malandragem is seen in Brazil as a way of being smart to take advantage in any possible situation, in other countries such malandro attitude may be seen as dishonourable. According to DaMatta (1994) law in many developed countries such as USA, France and England is used as an instrument to help the society to function well and not to exploit its citizens. There, either the rules are followed or they do not exist. Furthermore, in these societies there are no reasons to establish norms that go against and in some cases, demean the social orderof the society, opening ways for corruption and expanding public mistrust. In contrast, law and rules in Brazil are primarily seen as a form of punishment and/or

mistreatment. To avoid such ordeals, it is worth being malandro (see DaMatta, 1994). In addition, due to a corrupt system where welfare opportunities for the poor are scarce, malandragem is seen as the solution to overcome the problem.

To this end, as well as samba and capoeira, malandragem was mainly associated with the working classes as a cultural behaviour and also as a form of resistance against a corrupt system. Eventually, it was suffused in the whole society and became a cultural identity of Brazilians. As a result, it was then infused in other cultural sectors such as football.

From a skill acquisition point of view, Vagner's statement above serves as a preliminary summary to what has been discussed in this Chapter. In other words, this statement and others outlined above point to the articulation of perception-action coupling in which the malandro has ginga to deceive and perceive the game situation. In doing so, he uses his imagination to create and improvise according to each particular playing situation. All of that with a style, the Brazilian ginga style that demands a high level of perceptual-motor skills.

6.3 Summary

In inductively exploring this investigation under the scope of the interpretive paradigm and guided by the bioecological model as a framework to organise the data, it was possible to reveal significant findings emerging from the socio-cultural and historical context of Brazil. As the results show samba, capoeira and malandragem are examples of macro level socio-cultural constraints that have shaped the skills of Brazilian footballers. Such a way of playing has been categorised as ginga, a style which alludes to the notion of playing football with flamboyance, sway, and cunning which demands high level of motor skills. However, ginga is not limited to movement alone but also it involves the capability of players to perceive and read the game so that decisions can be made accordingly.

These factors are what Gibson (1979) referred to as perception-action coupling. The more attuned is the coupling between perception and action, the more expert a player will afford to be. In practical terms, an expert player is highly capable of perceiving information available in the game so that he/she can act upon. On the other hand, an expert player has the ability to act or move around in an efficient manner in order to perceive what is going on in the game. In this sense, the process underlying perception-action coupling is reciprocal.

Certainly, the level of expertise of perception-action coupling is not limited to Brazilian players. Many other countries have players with high levels of perception-action coupling. However, the difference is that Brazilian players often do it with a ginga style which, aesthetically is a beautiful as well as a functional way of performing football movement coordination. Bear in mind that the term ginga does not exclusively belong to football. It is also synonymous with malandragem, samba, and capoeira constraints. Under this perspective it can be argued that ginga is a common feature that links these three socio-cultural macro constraints together. As a result it was just a matter of time before football was associated with ginga too (although not all Brazilians play with ginga as stated above). Given that historically Brazilian football style has been engrained into the heart of national and international football community, the term will prevail as the Brazilian style regardless of whether the Brazilian national team play with or without ginga.

Similar to Chapter 5, this chapter reveals that even apparently aversive socio-cultural constraints can play an important role on the development of expertise of Brazilian football players. Therefore, in summarising what I have discussed so far, the Brazilian football style has been categorised with a number of key features such as samba, capoeira, malandragem, sway, flamboyance, creativity, and improvisation. Freyre put all of these codes together into one word: Dionysian. However, apart from academics and readers alike, this term has never prevailed amongst the masses. Rather, a more dominant term that has been popularised when

referring to Brazilian football style is ginga. In this sense, the Brazilian poet and anthropologist Antonio Risério provided a concise summary in an interview to Fernandes (2007) when articulating football with samba, capoeira, and malandragem:

> The Brazilian people reinvented football by playing with corporeal intelligence acquired from their ethno cultural formation. At the base, it involves samba and capoeira with rhythm and malandragem. It is not by chance that we can use the same word - and of African origin: ginga - to speak of meandering body movements of samba, capoeira and football players.

Hence, the Brazilian style is a product of the socio-cultural constraints primarily influenced by the mullato's cultural traditions interacting with particular socio-economic conditions which in turn reflected in the development of the high calibre of the perceptual-motor expertise of the Brazilian football players. In this sense, the whole process involving samba, capoeira, and malandragem and football can be turned into one word, Ginga.

Figure 11. The man in the picture represents a typical malandro on the street.

CHAPTER 7

Epilogue

7.1 Introduction

Brazil is a nation of immense diversity and adversity with the beautiful and the ugly tightly joined together. From music and literature to politics and sport, Brazil's culture was influenced by the contribution of Índios, Portuguese, Italians, Germans, Japanese, English, and Africans. As I am writing this, there would be no such better time to see Brazil's diversity than via the current affairs of the Fifa World Cup 2014.

Despite all the contrasts, there is one thing that encapsulates the essence of Brazil as a nation. That is, football. Brazil has been referred to worldwide as the football nation which plays with a flamboyant, unique style. To be able to understand this reputation from a scientific point of view, this research investigated the influence of socio-cultural constraints on the expertise development of Brazilian football players. In this context, a number of pre-existing motor learning views had to be challenged. For instance, to further understand how sport skills are acquired, unconventional or even aversive variables had to be investigated. Given that such variables could not be measured under traditional quantitative methods of inquiry, a multi-qualitative methodology had to be developed.

As a result, the contextualised skill acquisition research (CSAR) framework was proposed as a positional approach (see Uehara et al., 2014) to explore the intersection of socio-cultural environment constraints and the acquisition of sport expertise. The foundation of CSAR is based on the philosophical assumption of the interpretive paradigm, informed by the theoretical principles of Bronfenbrenner's bioecological model of human development and guided by the ethnographic strategy of inquiry. The overarching theoretical foundation proposed for this framework is informed by the perspective of Ecological Dynamics, and more specifically the constraints-led approach.

Overall, this thesis provides new knowledge to the literature by offering new insights at different levels of research. Firstly, on a methodological level this research offers an

alternative methodological framework via the proposed framework CSAR. As suggested in a recent publication emanating from this research programme (Uehara et al., 2014) it is hoped that other researchers will adopt the CSAR framework to consider the socio-cultural constraints that exist within their own countries. On a theoretical level, this research draws from and elucidates upon the constraints-led approach providing ways of investigating environment constraints beyond its physical environmental domain. That is, within the paradigm of the CSAR, socio-cultural environment constraints can also be investigated. Finally, on a philosophical level this research serves as a potential stepping stone to narrow the chasm between positivist and interpretive paradigms and in turn between qualitative and quantitative methods of inquiries.

7.2 Key Findings of this Research Programme

Brazilian football style is informed by the historical-socio-cultural contexts of Brazilian society (see Chapter. 4). Historically football in Brazil has been used as a tool to manipulate the balance of power amongst socio-economic classes, race, politicians and leaders. Myth or not, the fact that Brazilians have a deep and passionate affinity with Brazil's beautiful game suggests that football will remain a crucial art of Brazil's national identity for many years to come. Despite the fact that in recent World Cups the Brazilian national team has not quite lived up to the playing standards or successes of previous teams, the powerful legacy of the Brazilian way of playing persists.

Once football was democratised in a way that not only the white elite were allowed to play but also the poor, mostly represented by the black and mullatos, a Brazilian football style emerged: playing with flamboyance and flair demanding a high level of perceptual-motor skills. The Brazilian football style has been described worldwide in many different ways such as football-art, beautiful game, joga bonito, samba football, and (as expressed in

this thesis) ginga. This thesis has shown that some of the key variables that have influenced the formation of such a style can be directly linked to other socio-cultural constraints encountered in Brazilian society. For instance, factors such as pelada, home and federated clubs have directly contributed to the development of skill expertise of Brazilian footballers (see Chapter 5). These variables have been categorised under the micro and meso system of the bioecological model. Still in Chapter 5, poverty has been categorised under the exo-socio-cultural constraints and discussed as an aversive constraints that has influenced the development of skills of Brazilian footballers. Lastly but not least, samba, capoeira, and malandragem are macro level socio-cultural constraints that have contributed to the way that Brazilians play (see Chapter 6).

7.2.1 Applications of the Bioecological Model to Research in Skill Acquisition

Within the confines of a written document (i.e., PhD thesis) it was challenging to both describe and explain the key findings using the bioecological model – see Limitations sub-section below. However, Bronfenbrenner's framework was certainly useful to codify and categorise different levels of constraints and the interactions that exist between them. For example, the concept of 'pelada' was referred to by many of the interviewees and it was a prominent feature of the observational analysis. 'Pelada' – literally translated as 'naked' and it alludes to the many informal environments where football can take place stripped bare of the traditional rules and regulatory influences that accompany competitive football games. Pelada was equally as evident from the privileged club level players who participated in spontaneous modified games on a daily basis, to the favelas where children play for fun and to escape the harsh realities of poverty. Pelada was described in Chapter 5 as a microsystemic level which encompasses the relationship between the developing person and his/her activities, roles, relationships with the immediate physical and social environment such as

family, school, clubs, and neighbourhood. However, pelada can potentially transcend many different microsystems and perhaps it is that feature which helps explain its now global popularity and potential. For the purposes of this thesis I have referred to pelada at a microsystemic level which offers numerous learning opportunities for its participants across a range of skill levels. It is perhaps fair to argue that in Brazil at least pelada has become so interwoven within the socio-cultural fabric that it is not possible to isolate it and fully explain its value. In the same way in other countries around the world popular leisure activities like 'backyard cricket' in England, 'beach cricket' Australia and pétanque in France, have come to symbolise so much more than just an enjoyable pastime.

The different manifestations of pelada that were observed serve as evidence of the importance and value placed upon this construct. Indeed, the documentary of the same name (see: *www.**pelada-movie**.com)* suggests that pelada has been translocated from Brazil and South America to most other continents of the world. The physical environments in which pelada take place seem central to its success as a vehicle for accelerating learning. Like many other contemporary recreational activities (i.e., skateboarding, parkour, free-running) pelada can be practiced in many types of environments and isn't constrained to a flat, grass pitch in the same way that traditional football is. Thereby even urban environments and spaces can present opportunities to play, and develop skills. Additionally, the fact that pelada emerges without formal structure or specialised equipment it provides a fertile environment for perceptual-motor skills to be developed. I would argue that perhaps some of the 'special' characteristics that Brazilian pelada enjoys include a fierce degree of competitiveness, the expectation of playing with flair, and an arena in which everyone that plays does so on equal terms.

7.2.2 Does 'the Brazilian Way' (Ginga) Still Exist or is it a Myth?

It seems that the national football teams produced from the 1950s-1980s saw perhaps the most iconic and purest forms of Brazilian football style (i.e., Ginga). The Brazilian national team last won the world cup in 2002 although the team of that world cup was a shadow of the flamboyant and extroverted style of teams through the 1950s-1980s. Even worse was the football displayed by the national team in the current 2014 Brazil FIFA World Cup, finishing in 4th place and considered by some as one of the worst Brazilian national teams ever. But how can we explain the relative decline of Brazilian football in the last few decades?

Globalisation could be one of the answers. Over the last 30 years or so the globalization of football has seen an exodus of talented Brazilian players to more affluent leagues such as Spain, England and Italy. With globalisation comes the financial power imposed by the capitalist system which may lead towards the notion of winning at all costs. As such, many coaches are under pressure to get results in order to satisfy the business side of the game. Besides, many coaches in Brazil today have adopted a more physical approach of playing rather than preserving the values of the Brazilian football style. From my personal perspective, the former coach of Seleção (another name for Brazil's national team), Mr Luiz Felipe Scholari can serve as a typical example of the mentality of today's Brazilians coaches. In this sense, players are instructed and trained to become faster and stronger with the potential cost of decreasing their level of perceptual skills.

However, on an individual level, I believe we continue to see Brazilians players emerging with the characteristics of ginga. For instance, Romário, Ronaldo, Ronaldinho, Rivaldo, and most recently Neymar are well-known Brazilian players who have displayed the essence of ginga when playing football. This suggests that Brazilian football style has been so intertwined with other Brazilian cultures that the only way to dissipate ginga style would be for other Brazilian cultures to dissipate also, which of course is extremely unlikely in the

short term. This is why I believe strongly that under this perspective the ginga style will prevail (Tiesler & Coelho, 2008).

7.2.3 Ginga is not Universal to all Brazilian Footballers

While the notion of football-art has been historically the trade mark of the Brazilian way of playing, it is important to acknowledge that not all Brazilian footballers have ginga. As an example, Freyre's theory about Brazilian football style exemplifies Leonidas da Silva as a dionisian player and Domingos as an apollonian footballer, albeit both were born and bred in Brazil. Similarly, Barreto (2004) suggested that we should not be surprised when someone refers to Brazilian players such as Kaká, or former players such as Tostão, and Falcão as dionisian players, although in essence they are apollonian. In interpreting this issue, Freyre (2001) drew attention to the fact that the Brazilian football style was not only a temporary trend that would disappear as the time goes by but rather it has been so deeply embedded in the Brazilian society it has therefore become part of Brazilian cultural identity. Such identity was shaped by the mullato culture which emphasises dance and personal expression, be it in football or in work (see Barretto, 2004). Therefore, in explaining this issue in philosophical terms, it can be argued that while not all Brazilian have ginga, there is a socio-agreement created around the Brazilian way of playing and hence, it is not surprising that one may generalise this idea to include all Brazilians as explained above.

7.2.4 The Development of the Contextualised Skill Acquisition Research Framework

The proposed CSAR itself can be considered as one of the major contributions of this research project. As outlined in Chapter 3 research in motor learning has progressed from the traditional laboratory-based research to a more representative, ecological form of research. However, regardless of the paradigms used, motor learning research has been primarily

analysed under the scope of quantitative methods of inquiry with the aim to yield a *valid* and *reliable* nomothetic research programme that can test pre-conceived hypotheses and assumptions underpinned by relevant theoretical grounding (Guba, 1990). As such, a deterministic relationship of *cause* and *effect* are sought in order investigate reductive movement behaviour that involves only few motor system degrees of freedom. Under these parameters, results can then be reported in a *generalised and representative* manner (see Denzin & Lincoln, 2005; Guba, 1990).

However, in the last few decades many qualitative researchers have raised concerns that the field of kinesiology has become too fragmented and that the quantitative reductive model is premised on being independent of cultural context and politically neutral when it is applied to the infinite, multiple layered complexities of the social world. Thus, the next analytical step on the spectrum of motor learning research was to find appropriate, yet rigorous ways of investigating abstract, unconventional variables such as the socio-cultural ones. To be able to achieve it the present thesis developed and proposed the CSAR framework that is based on a multi-methodological approach which encompasses the philosophical assumptions of the interpretive paradigm, the epistemological principles of Bronfenbrenner's bioecological model, and the methodological tenets of ethnographic strategy of inquiry. I hope that one outcome of this research programme will be that other researchers consider adopting the CSAR framework and its methodological tools in the future so that further meaningful contribution can be made to the motor learning literature.

7.2.5 Theoretical Implications of this Research via the Constraints-Led Approach

This PhD has provided an analysis of environmental constraints and their role on development of expertise. Surprisingly this is arguably the first time since Newell (1986) first proposed the model that it has been extended in this important direction. To elucidate this

issue with one pertinent example, malandragem (cunning) can be used to explain cultural contexts to inform how Brazilian players (i.e., malandros) deal with different environmental constraints. As G. Rocha (2006) acknowledges, malandragem is a traditional social construct in Brazil that is cultivated by the popular media and important events like carnivals. As delineated in Chapter 6, malandragem is a macrosystem concept that resurfaces in several of the variables examined in the thesis. This cultural phenomenon is present in samba, capoeira, and ultimately it can be an influential factor in football skill development. As an expression of shrewdness, creativity and skilfulness, the archetypal Brazilian footballer exudes malandro in deceiving and beating an opponent.

In other countries, such as England, using malandragem to gain an advantage in sport is a relatively unknown phenomenon. In fact malandros are typically discouraged and seen as unfair and unsportsman-like. In the past there has been little evidence that malandragem has permeated beyond Brazil (South America) although with football becoming such a global sport in the last 30 years its manifestation is perhaps more apparent (see Gard, 2014; Giulianotti & Robertson, 2009). Many would argue that elements of malandragem, such as simulation/diving and arguing with the referee, represent negative aspects of the game that need to be removed. However, the positive aspect of being malandro or use malandragem in the game of football is about being smart to find rapid solutions for unpredictable challenges that emerge in the game. In this sense, a good malandro would use ginga to create, improvise and make rapid, accurate decisions during the game. This is undoubtedly a fascinating new finding from this research programme the culturally specific influences on learning and skill development merit further investigation.

Another significant contribution to the constraints-led approach is the fact that the boundaries have been stretched by the idea that some constraints whilst seemingly aversive can enhance learning/performance. For example in Chapter 5, the exosystemic factor of

poverty has typically been conceived of as an aversive variable. An exosystem is an environmental influence which affects a developing person but they are not directly responsible for it. The interviewees often acknowledge that poverty has impacted upon their development in a fairly negative fashion (i.e., Rodrigo became involved with crime). However, a more nuanced and considered view of poverty is that it can potentially endow an individual with a powerful set of tools to complement their physical skills. For example, children learn that they have to stick up for themselves and also to take an opportunity when it is presented. Poorer children may spend more time outside playing and developing physical literacy (albeit possibly at the expense of formal education). Moreover, living in poverty provides individuals with a sense of perspective against which to contrast the pressures of playing competitive football. This is not to argue that poverty is a necessary prerequisite to developing a Brazilian style of playing but arguably it has (and continues to) played a role, albeit complex in many Brazilian players' development. There may be lessons to be learnt here for talented athletes who in some contexts are provided with everything from an early age and arguably don't have as much to gain as those living in poverty.

In highlighting this issue, the theoretical understanding of some interviewees is low leading therefore to a misinterpretation regarding the issues of talent, and genetic inheritance. Several of the interviewees attributed a player's talent to a genetic gift and also underplayed the role of the environment in the expression of these capacities. It is now generally agreed that nature and nurture are inseparable and that explanations of talent that are polarised in either direction are misinformed (Davids and Baker, 2009). Furthermore, ideas of biologically or genetically-based racial essentialism have been widely discredited. Therefore, whilst valuing the beliefs and comments of the interviewees it was necessary at times to step back and interpret each script from the perspective of CLA. For example, some of the interviewees question whether it is possible to learn how to dribble in the ginga style

preferring to attribute such a skill to an innate inherited ability rather than to years of practice. Whilst such beliefs are difficult to disprove experimentally, an informed understanding of genetics and environment can only lead to a sensible conclusion that each has an important role to play (see Ridley, 2003). Skill is not a thing that is represented or acquired by our brains instead it is a set of relationships established between ourselves and our environments.

7.2.6 Contribution to Brazilian Football Organisations

As an enthusiastic Brazilian football fan there was no worse feeling than seeing the national team losing to Germany by 7-1 in the most recent Fifa World Cup 2014, held in Brazil. However, thinking rationally from a social as well as skill acquisition perspectives, there was no better way of losing because such a loss shocked the system and in turn gave the opportunity to the Brazilian society to see that its football demands urgent changes on and off the field. As a result, today one of the main discussions in the media and the public concerns the return of football-art. For many, the notion of football force, which in Brazil is considered a characteristic of European football, is not part of the Brazilian cultural identity and hence it does not suit the Brazilian way of playing. The key therefore is to understand the importance of the physical demands in modern football but without losing the essence of Brazilian way of play which is playing with ginga (see Sá, Fernandez, & Iannacca, 2014). Previously, in an interview given to the newspaper *'The Time'*, Rivelino raised concerns about the future of seleção due to the lack of practicing street-football (see BBC, 2006). However, how can we implement or go back to that once traditional way of playing when other socio-cultural issues such as violence and urbanisation have taken place in the modern context of Brazilian society?

To effectively address this issue, it is crucial that Brazilian football organisations understand that football cannot survive under the domain of clichés such as "we don't learnt

football but rather we were naturally born with it". With this in mind, the problem of urbanisation that has occupied the free spaces for pelada can be overcome by setting up training centres with qualified coaches that understand the effect of physical as well as socio-cultural constraints influencing the development of perceptual-motor skills of Brazilian players. As my interviewee Medina pointed out, the key for the success of Brazilian football in the future is to bring back the essence of street soccer (e.g., pelada) to football training programmes and in fact, making the training curriculum even better by applying educational values to it.

Therefore, football organisations should consider the importance of understanding that Brazilian football has been informed by its historical-socio-cultural constraints in order to develop effective training programmes that focus not only on football but also on education values as asserted by Medina.

7.3 Limitations of this Thesis

7.3.1 Application of Bronfenbrenner's Bioecological Model

It proved too difficult to apply Bronfenbrenner's bioecological model as a whole to the data generated. For logistical reasons it was necessary to fragment the analysis in a linear manner in the light of each chapter of the thesis. However, it wasn't my intention to imply that each sub-system or variable operates in isolation of each other. Different forms of presenting and interpreting this type of information (e.g. documentary, case study, biography) are perhaps more effective vehicles in which to disseminate knowledge than the traditional research thesis format employed here. It should be acknowledged that while Bronfenbrenner's model is not new to the field of motor learning, only a relatively small body of existing literature has employed this bioecological approach (e.g., Araújo et al., 2010; Gabbard & Krebs, 2012; Krebs, 1992, 2009).

The undoubted benefit of using the bioecological model is its holistic and inclusive nature, the drawback is the lack of an effective means to summarise and/or categorise the complex relationships that the model assumes exist. Regarding the latter, Araújo et al. (2010) have discussed poverty under the domain of Bronfenbrenner's macrosystem. While for the purpose of their study they may have chosen the right ecological system to categorise poverty, I have my concerns about classifying poverty in such a way. This is because poverty is not cultural based but culture is one of the key factors that encompass the definition of macrosystem (see Bronfenbrenner, 1979, 2005). Hence, in my thesis I have categorised poverty under the layer of exosystem because such exosystemic environment provides contexts (e.g, family wealth) in which the developing child is not directly responsible for but it does have an influence on child's behaviour and development, which in the case of this thesis is referred to the development of expertise of perceptual-motor skills (see Chapter 5).

Notwithstanding the lack of appropriate categorisation, the point that we can take from this issue is the fact that categorising variables that best suit each of the nested system of Bronfenbrenner's model is subjective to interpretation as well as subjective to the purpose of the study. This shows that such interpretations cannot follow a mechanistic and reductionist linear analysis because the analysis of socio-cultural has to be contextualised and articulated as a whole rather than fragmented. Therefore, given that it is a complex task to be achieved, I would like to reemphasise this issue as one of the limitations of this study as stated above.

7.3.2 Difficulty in Extracting Concise Information from Participants

It is difficult to verbalise the effect of socio-cultural constraints on skill acquisition. The data obtained were highly dependent upon my skills to perform the interviews and despite all the efforts to train myself prior to data collection, further training is required in the future for

better outcomes. Additionally, the quality of the answers provided by the interviewees was highly dependent upon their ability to express themselves in a coherent and clear way, which in turn was highly dependent upon their level of experience, education, and perhaps their willingness to participate.

To facilitate the process of data collection, interviews were semi-structured and certain themes were pre-determined based on the socio-historical contextualisation. This enabled interviewees to reflect openly on the nature of their own developmental experiences. I also collected a range of different types of data so that information was richer. One must concede, however, that these kinds of variables are not well suited to quantification or experimental manipulation. As such qualitative methodologies are much better suited to understand and interpret them.

7.3.4 Time and Funding – Reaching a Point of Saturation

Certain delimitations were necessary to complete this research programme. For example, only one region of Brazil was visited in fieldwork and that trip lasted only 6 weeks. Ideally contrasting regions of Brazil would have been examined to ascertain the generality of the data generated in Jundiaí and São Paulo cities. However, gaining access to this particular region was only possible as a function of the investigator. Several of the interviewees came from other regions and their comments lead me to believe that the point of saturation had been reached and that generality of the findings is possible.

7.3.5 Speculation on the Implications of these Limitations

It is possible, indeed quite likely, that I have deemphasised important variables in my analysis, for example the issue of the socially constructed nature of gender. Most importantly, the development of football expertise of Brazilian players may be entangled with the

contextually specific ideas of masculinity which provide norms and hierarchies around valued and rewarded behaviour and learning. There are probably other influential factors that have not been explored within this thesis. In order to generate good quality information about factors such as pelada, poverty and so on, it was necessary to probe these issues deeply through interview. Undoubtedly there are other pertinent socio-cultural influences that have yet to be uncovered; for example, expectations and stereotypes around 'race' and ethnicity. It is my hope that I (alongside others) will be privileged to further investigate such factors in the future.

7.4 Suggestions for Future Research

In order to further explore the relationship between socio-cultural constraints and the development of skill expertise, a number of suggestions and questions for future research can be raised. For instance, a comprehensive analysis using a range of methodological tools would be most informative. For instance, ginga could now be investigated from a more traditional scientific approach such as biomechanical analysis in which skills and movement patterns can be measured; and decision making testing in which the coupling between perception and action can be gauged. In addition, player's attitudes, beliefs, and confidence could be explored under psychological examinations.

Moreover, as the effect of physical environmental constraints on skill acquisition is a particular focus of interest of many colleagues, certainly further investigations are needed in this area. As per this thesis, my main focus of interest was to investigate the influence of socio-cultural constraints in skill development. However, my results show that the analysis of socio-cultural constraint can lead to issues related to physical environmental constraints such as the ones encountered in pelada (e.g., the surfaces of makeshift grounds). In this sense, I have only discussed issues related to physical environmental constraints in an implicit way.

Researchers may further explore this issue in the future by considering a holistic analysis in which both physical as well as socio-cultural environment constraints can be articulated and analysed together.

Other variables such as gender, 'race' and ethnicity, urbanisation, and globalization could be investigated so that more insightful information may emerge to further enhance the knowledge. Such variables have emerged from data analysis but they were not strong enough to reach a point of saturation and therefore to be explored in the present study. So, in the future gender is an issue that has to be considered for many reasons. For example, football in Brazil is still primarily considered a male sport, therefore, there is a disparity in the number of males playing football compared to females. However, while the number of female teams has increased in the last decade, the opportunity for girls to make a living out of football is limited. In addition, the language used in football, the attitude and behaviour of players have been historically dominated by males. Therefore, it can be argued that as a male domain the style of Brazilian football may be a function of masculine codes.

Urbanisation is another factor that may have an influence on the development of skills of Brazilian football players. As the interviewee Medina pointed out, urbanisation is an irreversible process that is taking place in Brazil and as a result the available space for pelada is decreased. According to interviewee Carlão, within this process of urbanisation comes the issue of safety and parents no longer feel safe to let their children go playing freely around their neighbourhoods. To compensate for the lack of space and to provide a safe environment for children to play, the number of business minded soccer schools has increased considerably in the last decades. However, as Silva argued, "these emergent soccer schools are causing problems to the overall development of our football children because they don't know what they are doing" (Interview, February 8, 2011).

The notion of globalisation demands further exploration too. As the interviewee Mr Trama pointed out, our style of playing with high level of skills and ginga is still a predominant feature of Brazilian football but the gap between Brazil and the world has diminished. Mr Trama says that the financial dynamics involved in today's football are strong, attracting many of our young talented players to go to play in Europe too young. By losing such talented pool of players in their young age we also lose the ability to develop and play with a unique Brazilian style. Everything becomes too Europeanised, says Trama. Under this scenario, it is interesting to note that Neymar is an exception. Since at a young age, top clubs from Europe wanted his football services offering him extraordinarily attractive salaries. He rejected them all until last year (2013), when at the age of twenty one he decided to play for Barcelona as I explain earlier in this thesis. By then ginga was already ingrained in his style and today he is one of those Brazilian player who carries on the ginga legacy.

Interviews with Brazilian players/coaches who have left to live in another culture may also provide insightful information. For these individuals the influence and uniqueness of Brazilian socio-cultural constraints may be more apparent than they were for those immersed (and only familiar) with home. In doing so, the following questions could be explored:

- Can certain aspects of Brazilian culture be translocated and successfully adopted elsewhere? For example can intensive capoeira training improve the coordination and dribbling skills of NZ football players?
- Or, is there something unique about the mixture of constraints in Brazil that allows these variables to flourish?

Finally, it is possible and my hope is that the proposed CSAR framework could be used to investigate the socio-cultural environment constraints aligned to sports of other countries. A potential nation for case study is New Zealand with their men's national rugby team, the All

Blacks. In this sense, one of the first questions to be asked is: Why is New Zealand so successful at rugby? Following up, assumptions and hypothesis can be made. For instance:

- How has rugby players' development in New Zealand been informed by its socio-history?
- What are the influences of Māori traditions, as well as other pacific cultures on the way that the All Blacks play?
- How have the physical environmental constraints contribute to the development of skills of rugby in New Zealand?

Admittedly, I should concede that I am not the ideal person to conduct such research for the same reasons provided to justify my role in this research programme. By studying sports expertise development at these different levels, New Zealand has the opportunity to better understand the influence of its own traditions and cultures upon its sporting achievements.

7.5 Conclusions

As the cliché goes the more you study, the less you know. More accurately, the more you seek to know the more you are aware of the complexities and limits of existing knowledge. This can be seen by the number of questions and suggestions in the above "future recommendations" section. However, I believe that the aim, objective and the purpose of this study has been achieved. By analysing skill acquisition from an interpretive paradigm I have encountered a number of taboos and myths about Brazilian football but, mostly importantly, I gained new insights on how to investigate and analyse sport expertise as a function of socio-cultural norms. Prior to embarking on this journey the pathway to examine socio-cultural constraints was not at all clear. I feel that an important outcome of this research programme has been to provide direction that others may choose to follow.

In summary, it can be said that skill acquisition in Brazilian football has been informed by its socio-history including the influence of socio-cultural constraints such as pelada, samba, malandragem, capoeira, poverty, etc. In addition, this research shows that skill acquisition can be rigorously investigated under the aegis of an interpretive paradigm. In doing so, the CLA has been elucidated on a theoretical level in a sense that not only are physical environmental constraints influential upon the skill acquisition process but also the socio-cultural environment constraints too. This research can also bring something useful both in terms of epistemology and methodology. The former refers to the notion that this research has further helped to diminish the gap that exists between qualitative and quantitative paradigms in sport and exercise science. The latter refers to the positional framework proposed as CSAR.

I remind the reader that the intended role of this thesis was not to test or confirm previous theories and knowledge but rather to provide an interpretation on how socio-cultural can be analysed and interpreted in an inductive manner. By being able to investigate socio-cultural environment constraints as a function of development of sport skills, I hope that this thesis serves as the door to further opportunities for exploration and can stimulate other researchers to use the model for further gains of knowledge in the motor learning literature.

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APPENDIX

DVD: Brazilian Football Ethnography

Menu Playlists:

- Paulista FC SSG
- Paulista FC Footvolley
- Paulista FC Rachão
- Luiz Playing Pelada
- Pelada at Different Stages of Learning
- Ginga in Vila Ana
- Conversation with Children
- Copa São Paulo (U20)
- Street Football Performer
- Seven Sharp Programme