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Francisco Miguel Costa Leite de Sá Fardilha

Health Sciences and Sport

University of Stirling

Exploring creative development in professional youth football academies through an integrative transdisciplinary lens

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Abstract

Creativity is the object of much interest in association football and is considered essential for successful performances. However, several high-profile coaches, players, and even scholars have argued that contemporary football lacks creativity. While the last three decades have been the most productive ever with regards to research on sporting creativity, little is still known about this complex, multi-dimensional construct. Furthermore, sporting creativity has been hitherto studied from a largely decontextualised, logical positivist paradigm, aimed at the identification and development of intra-individual traits and skills associated with creative performances. However, in recent years the field has witnessed a 'socio-cultural' turn that proposes a re-conceptualisation of creativity as a situated, distributed, and relational phenomenon. Departing from this perspective, the present thesis uses an integrative transdisciplinary approach to better understand the perceived decline in creative expression and development in contemporary association football, with a focus on professional football academies. These performance-oriented settings have singular characteristics (e.g. growing professionalisation and marketisation, high pressure, social closure, and hyper-masculinity) that suggest they should be studied separately from participation-oriented environments. Study 1 examines conceptualisations of creativity from Heads of Academy Coaching and Heads of Academy Recruitment across ten professional clubs and three different European countries (Portugal, Italy, England/Wales), comparing it with academic literature. Study 2 investigates the opportunities and challenges for developing creativity in a Portuguese professional football academy across multiple levels. Study 3 extends our knowledge regarding the development of creativity at the highest level of performance through a biographical case-study of 'super-elite' player Bernardo Silva. In conclusion, I propose that more than a teaching/training process of natural abilities, creative development in football should be re-conceptualised as a broader, non-linear learning process, dependent on multiple interactions between a myriad of stakeholders – players, coaches, parents, teachers - across different formal and informal, socio-cultural and material environments.

Declaration

I declare that I alone composed this thesis and that it embodies the results of my own research. Where appropriate, I have acknowledged the nature and extent of work carried out by others included in the thesis.

Signed 

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Chapter One: Introduction

1.1. Overview to the Thesis

Creativity is the object of much interest in association football, and is considered important for successful performances (Kempe & Memmert, 2018). In line with perceptions of sport as fertile ground for mythology and athlete 'deification' (Giulianotti, 1999), in football the number 10 jersey has been traditionally associated with outstanding creativity usually displayed by attacking midfielders (Rasmussen, Glăveanu, & Østergaard, 2019), e.g. Maradona, Pélé, Laudrup, Neymar, Bergkamp, Del Piero, or Messi. However, several high-profile coaches and players have argued that contemporary football lacks creativity. For example, AS Monaco and former Chelsea, Arsenal, and Barcelona star Cesc Fabregas contended that the current game prioritises physical skills over technical prowess and "number 10s are unfortunately fading away, big time" (Fabregas, as cited in Edwards, 2020). Similarly, Arsène Wenger, FIFA's Head of Football Development, claimed that "physique has taken over, and the creative players have been kicked out (…). You want to see players like Maradona, Cruyff, Platini, Zidane. But since we measure the physical performances, these players are suffering" (Wenger, as cited in Smith, 2020).

There are however alternative explanations for such perceived decline of creativity in association football. On the one hand, creativity has been recognised as complex, multi-dimensional construct (Kurtzberg, 2005). Indeed, to date there is no consensual definition of creativity. In 2010, Kampylis and Valtanen found more than 40 definitions of the construct, and more recently Vaughan and colleagues (2019) termed it 'a wicked challenge'. Rececnt conceptualisations of creativity as a dynamic (Corazza, 2016; Tanggaard, 2019), situated, distributed, and relational phenomenon (Glăveanu, 2010b; 2014; 2018; Glăveanu, Tanggaard & Wegener, 2016; Lebuda & Glăveanu, 2019) imply that creativity can mean different things to different people in different places and moments, and therefore should be evaluated locally (Sternberg, 2019).

On the other hand, association football has also dramatically changed since its origins as an amateur game. Similarly to other areas of society, football has become a global (Giulianotti, 2012) and highly commercialised phenomenon (Howieson & Morrow, 2014), permeable to a plethora of political, socio-cultural, and economical influences. Many professional football clubs "are now complex businesses, intrinsically concerned with financial matters" (Morrow & Howieson,

2014, p.515), and focused on immediate outcomes even at the youth level (Vaughan et al., 2019). Indeed, Sarmento and colleagues (2018) explain that talent identification and development is becoming increasingly important for the financial success and survival of football clubs (Sarmento, Anguera, Pereira & Araújo, 2018). Additionally, in the urban, digital society of the 21st century – and especially in Western, industrialised countries -, there are "many obstacles that restrain the creative potential, such as the lack of street sport, unadjusted training, mechanization of play, decrease of the game enjoyment and a narrow game knowledge" (Santos et al., 2016, p.1).

The perceived decline of creative expression in association football may also be related to changes in the way the game has been played over time, due to multiple reasons. One may be phenomena of 'blending' caused by staff (Peeters, Mills, Pennings, & Sung, 2019) and player migration (Lago-Penãs. Lago-Peñas, & Lago, 2019) that affected playing styles that were traditionally stable and clearly identifiable across different nations. Other reason could be the varying tactical systems devised and implemented by coaches over more than a century: from the initial 'pyramid' and 'W-M' systems to the more recent 4:3:3, 4:4:2, 3:4:3 and/or 3:5:2 (Wilson, 2008). Simultaneously, the widespread adoption of scouting systems and video analysis software by football clubs means that they have now extensive information on positional data and typical players' behaviours across several seasons (Memmert & Raabe, 2018). With less time and space for players to decide and execute, the value of adaptability and unpredictability is at a prime in contemporary football (Torrents et al., 2016). Thus, while the dearth of so-called 'number 10s' could be interpreted as a sign of a decline of creativity in association football, it could also be contended that the plastic nature of the construct and the evolution of the Game may actually lead to a somehow paradoxical phenomenon of democratisation. This is because due to wider role remits, players in positions other than the traditional number 10, e.g. goalkeepers, defenders, could benefit from more opportunities to act creatively.

Creativity has also deserved growing attention from scholars and decision-makers. Indeed, the last three decades have been the most productive ever with regards to research on sporting creativity (Fardilha & Allen, 2019), and national governing bodies (NGBs) like the English FA have created content dedicated to the topic. For example, the guide 'how to make your team more creative' (Pain,

2020) and the online course ‘youth football coaching: developing creative players’ (English FA, 2017), in partnership with the University of Birmingham.

However, most research conducted to date on sporting creativity has adopted generalist conceptualisations of the phenomenon, usually imported from the more developed field of cognitive psychology (Fardilha & Allen, 2019). Furthermore, the vast majority of existing studies portray intra-individual, positivist-informed perspectives of sporting creativity, largely conducted in controlled settings – e.g. laboratories - that do not account for the influence of contextual variations (Fardilha & Allen, 2019). Additionally, existing research has very much focused on thought processes over the ability to act (creativity ‘about sport’ instead of creativity ‘in sport’) privileging the identification and development of traits and skills associated with creativity, like attention or pattern recognition.

A recent manifesto (Glăveanu et al., 2018) signed by 20 of the field’s most prominent researchers invited “the community of creativity researchers and practitioners to reflect upon, study, and cultivate creativity as a socio-cultural phenomenon (2018, p.1). In line with these recent advances founded on socio-cultural psychology, authors like Rasmussen, Østergaard, and Glăveanu (2017) and Vaughan and colleagues (2019) proposed that creativity is affected by socio-cultural constraints at multiple levels, which could therefore benefit from being investigated with transdisciplinary approaches (Vaughan et al., 2019). In accepting these suggestions, the present thesis aims to better understand the perceived decline in creative expression and development in contemporary association football reported by practitioners, i.e. coaches and players, and researchers (e.g. Santos et al., 2016). To do so, I will adopt Montuori’s (2019) integrative transdisciplinary approach. This will enable me to ‘weave together’ knowledge from different disciplines (e.g. sport coaching, sport psychology, sport sociology, and sport management) and better capture the complexity and multi-dimensionality of creativity in professional football academies.

Professional academies are particular environments, focusing on the development of elite players and/or on the generation of significant revenues via the sale of players (Relvas et al., 2010). These spaces are usually associated with high pressure (Mills et al., 2014) and expectations, and have low tolerance for failure (Reilly, Williams, & Richardson, 2008). Such characteristics make

academies different from other more participation-oriented pathways of player development, traditionally called ‘grassroots’ (FIFA, n.d.), which means they should be studied separately. Furthermore, the transdisciplinary approach will allow me to bring closer the words of scholars and the voices of practitioners (e.g. coaches, scouts) and other relevant stakeholders (e.g. players, parents, teachers), observing how their interactions across multiple levels (e.g. individual, organisational) may promote – or hinder – the creative development of young players integrated in professional academy settings, inclusively those who reach the top of the Game, i.e. eminent, ‘super-elite’ players.

1.2. Thesis structure

Following this introductory chapter, chapter 2 presents a literature review of so-called ‘general creativity’, offering to the reader an historical overview of the different paradigms that have characterised the field, and highlighting its most pressing debates. Then, in chapter 3 I focus on creativity in the sporting domain. I introduce and reflect critically on the academic literature published to date, identifying what is known about the topic and what are the field’s shortcomings. Subsequently, I describe the aims of my doctoral research. Chapter 4 offers an in-depth contextualisation of talent development environments and, more specifically, professional football academies, setting the scene for the upcoming original research. Chapter 5 is devoted to presenting the philosophical underpinnings of my thesis, integrative transdisciplinary, and discussing how they have influenced the research process. Chapter 6 is dedicated to study 1, in which I explore conceptualisations of creativity from Heads of Coaching and Heads of Recruitment pertaining to 10 professional football academies in three different countries (Portugal, Italy, and England). Chapter 7 introduces study 2, an instrumental case-study in which I identify and analyse the challenges and opportunities for creative development within a Portuguese professional football academy, using Tanggaard’s (2014) situated model of creative learning as a theoretical framework for the first time in sporting creativity research. In chapter 8, I present another case-study, in which I present and discuss the developmental pathway of ‘super-elite’ Portuguese footballer Bernardo Silva. Once again, I use Tanggaard’s (2014) situated model to frame my analysis of the player’s life, not only with regards to the sporting domain, but also considering the impact of family and educational experiences on his creative development. Chapter 9 is the

final chapter, where I return to the aims of the thesis and, drawing on the conclusions from each chapter, I reflect on the extent to which these aims have been fulfilled. I also refer to the strengths and limitations of my work, discuss the practical implications of my findings and propose avenues for future research.

Chapter Two: Creativity, stepping back to move forward

2.1 Introduction

In this chapter I will present and critically discuss the historical background and existing research on 'general' creativity. Doing so is necessary because the field of sporting creativity has been – and still is - largely influenced by research conducted by mainstream psychologists with a positivist orientation (Fardilha & Allen, 2019). Although systematic research on creativity only started in the 1950s (Guilford, 1950), the topic has been discussed for many centuries (Pope, 2005). As with any human endeavour, historical accounts contain a degree of subjectivity that results from different positionings, beliefs, and experiences. This, in turn, influences the interpretation of facts and events (Hampson, 1976). Therefore, instead of a consensual or definitive history of creativity, there are "multiple 'histories' of creativity with their own angles and perspectives" (Glăveanu & Kaufman, 2019, p.10).

To date, several authors have attempted to synthesise earlier research on creativity (e.g. Vernon, 1970; Sternberg, 2003; Runco & Albert, 1990; 2010). For the purpose of this thesis, I will use the "He [sic]-I-We paradigm" coined by Glăveanu (2010a, p.80), as a framework to describe and reflect on the different perspectives and theories of creativity that have been proposed across time. The paradigm divides the history of creativity and creativity research into three major eras/approaches: the 'He-paradigm', associated with the predominantly male, lone genius myth (Montuori & Purser, 1999), which refers to an individual who is blessed with divine inspiration or unique genetic heritage; the 'I-paradigm', that focuses on isolating the intra-psychic traits and skills from individuals that may be conducive to creativity; and the 'We-paradigm', that on a first phase considers the impact of socio-cultural factors in the creativeness of individuals, and on a second stage posits that creativity emerges from the interactions between people and their socio-material worlds.

While it is clear that such structure (i.e., He-I-We paradigm) may be useful and appealing, this framework should not be interpreted as a fully accurate representation of the field's history, because "it is likely that 'instances' of these paradigms coexist at different times and they are certainly intertwined in today's scientific landscape" (Glăveanu, 2010a, p.80).

2.2. The ‘He Paradigm’: the creative genius

The *lone genius* is one of the figures most associated with creativity, with its roots dating back to ancient Greek and Roman eras (Glăveanu, 2010a). At first, a theocentric conceptualisation of the world informed the meaning of genius (Kearney, 1988). Genius was a gift from God(s) and external to the individual (Pope, 2005), whose self was “subsumed and sacrificed to the greater whole” (Montuori & Purser, 1995, p.72). Although the idea of creativity as divine inspiration persisted throughout the Middle Ages until the Renaissance (Glăveanu & Kaufman, 2019), Montuori and Purser (1995) suggest that traces of that narrative can still be seen in contemporary collectivist, totalitarian regimes, where the State replaces God(s). Since the Renaissance, the source of genius is no longer viewed as external. Instead, it is believed to reside in the individual (Pope, 2005). At the beginning of this anthropocentric era, a cult of the self emerged and was materialised in self-portraits, biographies, and anatomical studies (Montuori & Purser, 1995). Creativity was by then linked to a glorification of traditions expressed via the imitation of the masters and nature that few dared to question. The artist Leonardo Da Vinci and the architect Giorgio Vasari were exceptions, highlighting the value of originality (Becker, 2014). Grounded in these historical views, novelty and functionality are still considered central to most contemporary conceptualisations of creativity (Diedrich, Benedek, Jauk, & Neubauer, 2015; Kampylis & Valtanen, 2010), although their meanings can vary significantly depending on the context (Sternberg, 2018).

The conceptualisation of creativity as novelty gained momentum during the age of Enlightenment, when genius was re-defined as “one who was in possession of an innate power that manifested itself in works of great imaginative creation (…) [originated in] the rational processes of the mind” (Becker, 2014, p. 8). In opposition to the rationalistic values promoted by the ‘enlightened’ aristocracy, at the beginning of the 19th century the Romanticists re-enacted the mysticism and emotion surrounding the figure of the genius (Becker, 2014), who once again was considered to be naturally endowed, even if also pathologised (Glăveanu & Kaufman, 2019). Tormented poets, composers and painters were common examples of ‘mad genius’, whose unique characteristics allowed them to excel in their fields through superior imagination and sensitivity. However, they were also prone to affective disorders, addiction and other types of mental illness.

The study of potential connections between creativity and pathology (e.g. bipolar disorder) has been of interest to researchers for many years and persists to this day (for reviews see Becker, 2014; Runco, 2014). However, with the development of modern science, the romantic perspective was again abandoned and replaced by a more systematic and rational understanding of the characteristics of genius. With the publication of 'The Hereditary Genius', in 1869, Sir Francis Galton "took genius out of the mists of the supernatural and gave it a solid basis: human biology" (Glăveanu, 2010a, p. 81). In his work, Galton also introduced the concepts of eminence, social reputation, and intellectual ability, which would end up being extensively researched and frequently associated with creative production (see, for example, Albert, 1990, 1992; Simonton, 2010; Guilford, 1962; Sternberg & Lubart, 1996).

To summarise, Glăveanu (2010a) suggests that exclusivity and disconnection characterise the He-paradigm. Exclusivity, because genius – and creative achievement – are only within reach of very few individuals (being almost entirely reserved to males, hence the title 'He' paradigm) and always associated with the highest type of creativity – historical – which refers to concepts and inventions that have never occurred before and may change human practices and beliefs (Boden, 1994). Disconnection, because the 'genius' creates out of nothing – *ex-nihilo* (Montuori & Purser, 1995), existing away from – and often against – the World. Therefore, the He-paradigm results in a potentially dangerous glorification of creativity, representing it as unachievable for most and, in some cases, as pathological (the 'mad-genius'). Curiously, Glăveanu and Kaufman (2019) explain that in the Latin language madness and inspiration were undistinguished and considered a type of demonic possession.

Social detachment was also presented as a *conditio sine qua non* for creative achievement. As such, there was an emphasis on hyper-individualism rather than collaborative work. More recently, societies have evolved towards increasing connectivity, mobility, and a generally democratic nature (Glăveanu, 2014), so such conceptualisation of creativity as the outstanding work of a single person has vehement critics. However, Pickering and Negus (2004) alerted that such a sharp conceptual turn could also be problematic, because it risked causing the devaluation of extraordinary acts. Therefore, they proposed that the patriarchal, racist, and deterministic notion of genius - "a rarefied and reified state of being"

(p.202), could be replaced by a new one which recognised the importance of the ordinary and the outstanding as part of the same process.

2.3. The ‘I Paradigm’

The ‘I Paradigm’ replaced the perception that only special people can be creative while maintaining an emphasis on the individual. Everyday creativity – personal (Boden, 1994), ‘little c’ (Simonton, 2013) – started to be valued alongside the usual examples of great discoveries – historical (Boden, 1994) or ‘Big C’ creativity (Simonton, 2013). Glăveanu (2010a) explains that such a shift can be linked to the American socio-political context post-Second World War, with rising individualism and the interest from the army in conveying to its soldiers an enhanced sense of agency during the Cold War against Russia. It is therefore unsurprising that most historical accounts of creativity are based on Western views of the phenomenon (Glăveanu & Kaufman, 2019).

The 1950s are usually described as the official starting point of systematic research on creativity, Nonetheless, earlier work such as Graham Wallas’ (1926) model of the creative process (Pope, 2005; Sadler-Smith, 2015) is still influential today. Wallas (1926) drew inspiration from the works of Helmholtz and Poincaré to divide the creative process into five consecutive stages, which warrant varying degrees of consciousness:

- preparation (consciously researching the problem via experiments, observations, and other reliable sources);
- incubation (non-conscious, involuntary dwelling on the problem associated with a degree of mental relaxation);
- intimation (a sense of intuition, under ‘fringe consciousness’ that a solution is close);
- illumination (the ‘click’ moment, focal consciousness);
- verification (conscious analysis – relative to the validity and reliability of the solution).

Although recent contributions have defended the five-stage model (e.g. Saddler-Smith, 2015), it is frequent to witness representations of Wallas’ (1926) work as a four-stage construction, with intimation being omitted.

The inception of the ‘I paradigm’ is closely tied to Joy Paul Guilford’s Presidential Address at the American Psychological Association, in 1949. At the time, Guilford described creativity as “an area in which psychologists generally,

whether they be angels or not, have feared to tread" (Guilford, 1950, p.444). The speech triggered the systematic study of the so-called creative personality (Guilford, 1950), giving official birth to a new field of research (Kaufman & Glăveanu, 2019). In this individualistic approach, there was a focus on the measurement of abilities and traits in isolation – the creative personality (Sawyer, 2012) – through instruments like self-report questionnaires, laboratory or class-based tests (e.g. Torrance Test of Creative Thinking, Remote Associates Test, Alternative Uses Test) and empirical observation (Simonton, 2019). The psychometric assessment of eminent creators, either living (e.g. Roe, 1953; Barron, 1963) or deceased – a method called historiometrics (Cox, 1926; Simonton 2019) - also became common in this paradigm.

Other than incentivising researchers to learn more about creativity, Guilford contributed to advancing the field by developing the Structure of Intellect (SOI) (1956;1967), a model that associated creativity with intelligence. The SOI model was an evolution from Thurstone's (1938) earlier work (Sternberg & Grigorenko, 2001) and proposed that every mental task is composed by an operation, a content, and a product. Sternberg and Grigorenko (2001) contended that the main difference between Thurstone's (1938) and Guilford's (1967) models was that while the former envisioned correlations among factors, the latter treated them as independent. The formal distinction between divergent and convergent thinking that emerged from the SOI model has been considered one of Guilford's most important contributions to the study of creativity (Runco, 2011). While convergent thinking has been defined as "one correct or conventional idea solution" (Runco, 2011, p.400), divergent thinking relates to the ability to generate different possible solutions to an open-ended problem (Kaufman & Glăveanu, 2019). Divergent thinking has four foundational dimensions (Guilford, 1956): fluency – which can be *ideational*, i.e. "the ability to have ideas", or, the most commonly considered, *expressional*, i.e. "the ability to put them [the ideas generated] into words" (1956, p.279); flexibility – "the shift of organization of a figure, shift of set or approach to a problem, or shift of category of responses" (p.280); originality – "the likelihood of giving unconventional, clever, or remotely associated responses to test items (pp.280-281); and elaboration – "an ability to provide details working toward completion, when a part or an outline is given" (p.281). Although it has been suggested that convergent thinking can also lead to creativity (e.g. Cropley,

2006; Simonton, 2015; Dietrich, 2019), divergent thinking has been more frequently adopted as the foundational concept for numerous tests that evaluate creative ability in verbal and non-verbal forms - e.g. Alternative Uses Test (Guilford, 1967), Torrance Test of Creative Thinking (Torrance, 1966). Nonetheless, Dietrich (2019, p.2) recently argued that "if both divergent and convergent thinking can lead to both creative and non-creative thinking, divergent thinking is incapable of identifying the processes that turn normal thinking into creative thinking. The treatment and the control condition cannot contain the same variable".

There are several other cognitive theories on creativity. Indeed, the cognitive approach has received the most attention from researchers to date (Runco, 2014). It is beyond the scope of this chapter to present them all (for extensive reviews see Sawyer, 2012; Runco, 2014). However, the three most commonly cited approaches are described: blind-variation and selective retention (Campbell, 1960), associative theory (Mednick, 1962), and *geneplore* (Finke, Ward, &Smith, 1992).

The blind-variation and selective retention model (BVSR) of the creative process, proposed by Campbell in 1960, was based on Darwin's theory of evolution (Sawyer, 2012). It stated that creative thinking is the result of a two-fold sequential process: first, the brain blindly generates different options– named 'variations'. Then, it moves onto a stage of evaluation, where only those options deemed most adequate – or in this case 'creative' - are selected. The proposal of blind generation has received much criticism over the years as some authors claim there must be a degree of directedness involved in generative processes (e.g. Martindale, 1999). However, over the past decade the BVSR has been further developed by Simonton (2011) and Dietrich (2015), who considered it a promising avenue for uncovering the mechanisms of the creative process. Furthermore, Dietrich (2015) attributed some of the criticism received by the BVSR model to its "difficult or counter-intuitive" nature and to some people misinterpreting 'blindness' as 'randomness'.

The associative theory of creativity was proposed by Mednick in 1962. It was inspired by claims that creativity is the result of a process of association of different signs and/or images: "the more mutually remote the elements of the new combination, the more creative the process or solution" (p. 221). According to

Mednick (1962), there are three ways of achieving a creative outcome – serendipity (‘an accidental contiguity’), similarity (due to a resemblance of the associative elements or the stimuli eliciting them), and mediation (the associative elements are brought into contiguity with each other). The Remote-Associates Test (Mednick, 1967) was based on this theory. In this assessment, three stimuli words are provided, and the person taking the test must discover a fourth word that represents a common denominator. For example, if ‘wheel’, ‘electric’, and ‘high’ were presented, the word ‘chair’ would be a correct answer.

While still based on a cognitive approach, the *geneplore* model of creative functioning (Finke, Ward, & Smith, 1992) differs from other proposals because of its heuristic nature as opposed to traditional explanatory frameworks (Ward, Smith, & Finke, 1999). According to the *geneplore*, the individual alternates between ‘pre-inventive’ idea generation and thorough exploration. Also, there is an ongoing process of “refining the[se] structures according to the demands or constraints of the particular task” (Ward, Smith, & Finke, 1999, p. 191). This means the generative and exploratory processes may occur in different ways: for example, through the combination of known and unknown concepts; through metaphors and/or analogies, or through the synthesis and reinterpretation of existing knowledge. While many other conceptualisations of creativity exist, the BVSR, associative, and *geneplore* theories can be presented as symbolic examples of a wider understanding shared among cognitive scientists that situates creativity *in the brain*.

The ‘I-paradigm’ offered a reductionist perspective of creativity, which implies the isolation of intra-individual skills and traits. Such approach was vital to the identification and explanation of some foundational mental components that have been associated with creativity (Sawyer, 2012), such as attention, perception, memory, and information processing (Runco, 2014). However, the ‘I-paradigm’ fails to fully capture the complexity of creativity, because individualistic approaches are too focused on intra-psychic characteristics and tend to ignore the interactions and inter-dependencies between individual(s) and the social and material worlds (Glăveanu, 2010a). Furthermore, the attribution of creativity is largely reliant on the completion of standardised assessment tasks, which require the accumulation of previous knowledge and experiences usually associated with Western world views (e.g. remote associates test). Sternberg (2019) criticised such

a counter-intuitive approach by proposing that creativity must always be evaluated locally: “whether work is creative in fact is not a product of some kind of universal evaluation, but rather will depend on the context in which creativity is evaluated” (2019, p.395).

2.4. The ‘We Paradigm’

“There are social processes occurring even in bacteria.”

(António Damásio as cited in Cruz, 2019)

Individual-focused explanations of creativity have largely emphasised cognitive thought processes with limited or no consideration for the influences of the socio-material worlds within which individuals operate. The recognition of the role of non-dispositional influences in the creative process (Kasof, 1995; Amabile, 1995) resulted in the creation of a more holistic, systemic perspective that Glăveanu (2010a) designated the ‘We-paradigm’. This paradigm has its roots in the 1970s (Lebuda & Glăveanu, 2019) with the appearance of the ‘social psychology of creativity’ (Simonton, 1975; Amabile, 1983) and aimed to overcome the dominant mono-disciplinary, mono-paradigmatic narrative (Montuori, 2010) of cognitive psychologists. As Hennessey claims: “creativity does not happen in a vacuum” (2003, p.181).

In early conceptualisations of the ‘We-paradigm’, the ‘social environment’ was viewed as a mere external factor or variable – among others – that impacted the individual’s creativity (e.g. Simonton, 1975; Amabile, 1983; Gardner, 1993; Kasof, 1995; Csikszentmihalyi, 1999). For example, Simonton (1975) investigated the availability of role models and political factors (e.g. political instability, and fragmentation) as predictors of creative productivity. Amabile (1983) studied the positive or negative influence of social environments on motivation. Intrinsic task motivation is one of the key areas of Amabile’s (1996) earliest componential model of creativity, together with domain-relevant skills and creativity-relevant processes (cognitive and personality). The confluence of these elements results in a ‘creative intersection’ (Amabile, 1997).

The importance of the social environment is founded on the premise that “there is not much that can be done about innate abilities and personality characteristics” (Amabile, 1983, p.viii). Consequently, focusing on the environment, which is subject to change and manipulation, could provide additional insight into creative development/expression. Recently, Amabile’s

componential model was re-conceptualised (Amabile & Pratt, 2016) to reflect a more contemporary understanding of creativity, which proposes that creativity and innovation are 'dynamic' and comprise cycles. The updated version also considers the critical role of meaningful work along the creative process, recognises the importance of emotions in creativity, and reflects on how extrinsic motivation may positively impact creativity.

Sternberg and Lubart (1991) coined an alternative explanation for creative expression - the 'Investment Theory' – which posited that creativity is the result of the "weighted sum" (1991, p.17) of six different elements/resources: intellectual processes, knowledge, intellectual style, personality, motivation, and environmental context. Furthermore, they indicated that the context is relevant for three reasons: firstly, it may spark idea-generation; secondly, it can foster or hinder the development of creative ideas; and lastly, it is responsible for the subjective evaluation of ideas.

During the 1990s there were increasing claims for the development of truly ecological frameworks for the study of creativity, based on the premise that each human being is a unique system. This system "does not operate as a linear sequence of cause-effect relationships but displays, at every point in its history, multi-causal and reciprocally interactive relationships, both among the internal elements of the system and between the organism and its external milieu" (Gruber & Wallace, 1999, p.93). It is thus unsurprising that Csikszentmihalyi's (1999) 'systems view' became one of the most celebrated models of creativity. It invited researchers used to investigating 'what' is creativity to reflect instead on 'where' creativity is. The systems view assumes that creativity cannot be studied "by isolating individuals and their works from the social and historical milieu in which their actions are carried out" (2014, p.47). Csikszentmihalyi proposed that creativity is, in fact, the product of three key forces: the field (social institutions), the cultural domain (responsible for passing the new ideas and forms to later generations), and the individual (responsible for bringing change into the domain, that the field will evaluate in terms of creative value). In turn, even if not directly mentioning creativity, Gardner's (1993) theory of multiple intelligences provided an important contribution to its advancement by serving as a springboard for a re-conceptualisation of creativity as a multi-faceted construct. Gardner (1993) suggested that instead of being a single-sided construct, intelligence could be

instead manifested across different domains: naturalistic, visuospatial, inter- and intra-personal, linguistic, bodily-kinaesthetic, logical-mathematical, and musical.

In summary, systems views highlighted the interconnectedness among self and environment and clearly outlined “the contextual and generative nature of creativity” (Glăveanu, 2012, p.29). Although social creativity started as an exploration of the importance of adequate environments and collaborative initiatives for the emergence of creativity, it transformed, across decades, into “a fundamentally epistemological reflection [on] how we create our understanding of creativity, and how that understanding (both academic and in everyday life) in turn ‘creates’ us, in a mutually causal process” (Montuori, 2019, pp.407-408). This recognition of interdependency and mutual causality has been further developed by researchers adopting a sociocultural perspective of psychology. (Glăveanu, 2014;2018).

2.5. Extending the ‘We Paradigm’: the role of cultural psychology

Cultural psychology is a recent (Cole, 1996) yet fast-developing field, which departs from the human need for meaning-making and tries to “capture the complex and dynamic phenomena of human experiencing” (Valsiner, 2014, p.37). The traditional dichotomy between individual and the social world is rejected, as both are considered inseparable and interdependent. Markus and Hamedani (2007, p.5) explained that “the option of being asocial or acultural (…) is not available. People eat, sleep, work, and relate to one another in culture-specific ways”. An increasing number of academics (e.g. Miettinen, 2006; Sawyer & DeZutter, 2009; Tanggaard, 2013; Glăveanu, 2010b; 2014; 2018; Glăveanu, Tanggaard & Wegener, 2016; Lebuda & Glăveanu, 2019) are building on these foundations to propose that creativity is distributed (between people, objects and places), situated (it has a time and a place) and relational (all elements are interconnected). Therefore, its dynamic nature (Corazza, 2016; Tanggaard, 2019) should lead to a focus on the process of creating that recognises creativity as a feature of human action (Joas, 1996; Tanggaard, 2013). Creativity should no longer be seen as a special attribute reserved for special people but instead as a part of everyday life. Doing so requires a reflection on the suitability of traditional research methods, which may be insufficient to capture the inherent complexity proposed by the sociocultural approach for the study of creativity.

To date, some theoretical frameworks have been proposed for the study of creativity under a sociocultural lens, such as Tanggaard's situated model of creative learning (2014) and Glăveanu's Five A's framework (2013). Tanggaard's model was created to address the need for adaptability and innovation in vocational learning settings and proposes three pillars: first, immersion in the topic of interest, including traditions and the subject matter, meaning that an amount of domain-specific expertise, reasonably developed, is crucial for creativity; second, experimentation and inquiry learning, which stresses the importance of playing, trying new things in different environments, being open-minded, and 'fooling around'; and third, resistance from the material of interest, which may result in feelings of frustration that can simultaneously be used as opportunities for creative development – "learning by and through resistance" (Tanggaard, 2014, p.111). Central to Tanggaard's (2014) conceptualisation of creativity is also the relationship between people and materials. Although rarely recognised by many researchers, materials are essential for creativity as they simultaneously operate as affordances and constraints for its development.

Along a similar line to the work of Tanggaard, Glăveanu (2013) proposed a Five-A framework for creativity, which aimed to extend Rhodes' (1961) influential 4P model that divided creative expression into four strands – person (which investigates how the physical and psychological characteristics of an individual impact on creativity), product (focusing on the embodiment of an idea into a tangible form), press (which identifies the relationship between people and the environment), and process (the study of the stages, steps and/or components that may lead to creative outputs). The Five-A framework differs from Rhodes' (1961) proposal in that it uses a sociocultural lens that considers the interdependency between strands and intends to contribute to "rewriting our current language of creativity". (Glăveanu, 2013, p.71). Subsequently, Glăveanu's (2013) framework added dynamism to Rhodes' (1961) earlier work. As a result, Rhodes' 'Person' became actor, because Glăveanu (2013) posited that the relation between actor and audience is fundamental to the existence of the former. Similarly, 'Process' was re-conceptualised as action, which expresses an integrated behavioural and psychological coordination. 'Product' changed to artefact, which is produced and evaluated within a cultural context; and 'Press'

was divided into audiences and affordances, which represent the dynamic, interactive relations between creators and the socio-material world.

In line with Glăveanu's and Tanggaard's investigations, Montuori and Donnelly (2016) have claimed that the complexity of the creative phenomenon should be addressed more adequately by researchers. Therefore, they proposed (Montuori, 2019; Montuori & Donnelly, 2016) the adoption of an integrative transdisciplinary stance – inspired by the work of Morin (2002;2008) and Bateson (1972;2002; Bateson & Donaldson, 1991). Their suggestions do not intend to devalue earlier research conducted under a positivist paradigm. Instead, it seeks a multidimensional treatment of the phenomenon of creativity that crosses traditional disciplinary borders and integrates multiple approaches (e.g. cognitive and socio-cultural). So, while some authors argued for an increased focus and specialisation that allows mainstream psychology to "regain control over the study of creativity" (Weisberg, 2015, p.119), Montuori (2019, p.412) advocated the importance of "weaving together" knowledge from different areas and from multiple levels of analysis, i.e. not only individual, but also at the organisational level for example. To do so, methodological and empirical approaches like diary methods, life positioning analysis, social network analysis, or research in multidisciplinary groups could be used (Lebuda & Glăveanu, 2019).

2.6. The emergence of organisational creativity

Creativity has been defined as a priority by many chief executives around the globe (Shalley, Hitt, & Zhou, 2015), and is considered essential for contemporary organisations to thrive - or even survive – in a fast-paced, highly demanding, ever-changing, globalised era (Mumford, Hester, & Robledo, 2012; Anderson et al., 2014; Reiter-Palmon, Mitchell, & Royston, 2019; Tanggaard, 2019). Within work settings, creativity has traditionally been associated with idea generation, and innovation with idea implementation (Reiter-Palmon et al., 2019). However, just like with the artificial uncoupling of divergent and convergent thinking (Dietrich, 2019), Anderson and colleagues (2014, p.1317) suggest that "the phenomena of creativity and innovation have such clear overlaps, similarities, and the potential of synergy to advance our comprehensive understanding of these phenomena in organisations".

The complexity that characterises creativity has led organisational researchers to explore multiple topics that may contribute to its emergence. In a

recent review of the literature on organisational creativity, Reiter-Palmon and colleagues (2019) suggested that organisations can facilitate creativity by, for example, selecting creative performers or individuals with potential based on a combinations of mediators like personality – e.g. openness to experience, self-efficacy, risk-taking – and motivation. They also discussed the importance of promoting training opportunities that foster idea generation and evaluation, as well as leadership that promotes psychological safety, and stimulates and supports the creative efforts of their staff. Other studies on organisational creativity stressed the importance of employees perceiving their work as meaningful (Hunter, Bedell, & Mumford, 2007) and stated the value of collaborative, interdisciplinary teams (Reiter-Palmon, de Vreede, & de Vreede, 2013). Furthermore, several models have been proposed to illustrate and make sense of organisational creativity - e.g. componential (Amabile, 1988; Amabile & Pratt, 2016), interactionist (Woodman, Sawyer, & Griffin, 1993; Woodman, 2013), team climate (West, 1990), collective (Hargadon & Bechky, 2006), and even sociological (Drazin, Glynn & Kazanjian, 1999). The first two – componential and interactionist – are by far the most popular among scholars (Anderson et al., 2014) and will therefore be presented in further detail.

The interactionist model of organisational creativity (Woodman et al., 1993; Woodman, 2013) was inspired by the work of Hans Eysenck and based on the assumption that human behaviour arises from the interactions between individual characteristics (including previous experiences and knowledge, cognitive abilities, personality, intrinsic motivation) and contextual variables. These interactions occur not only at the individual level, but are also replicated at the team/group level (accounting, for example, for group composition, cohesiveness, and problem-solving approaches) and the broader organisation. In that vein, Woodman's model (2013, p.396) proposes that organisational creativity "is a function of the creative inputs of its component groups and teams and of various contextual influences at the organizational level (e.g., organizational culture, reward systems, resource availability) that impact individual and group creativity" across time, undergoing (at times several) feedback loops. Interestingly, and unlike many other theories of organisational creativity, the interactionist model recognises that the external environment (outside the organisations) can influence creativity in organisations.

With regards to the componential theory, it was first presented in 1988 by Teresa Amabile in response to the lack of a "comprehensive model of how the process of innovation occurs and what influences it (1988, p.124). The initial framework was recently updated (Amabile & Pratt, 2016) and rebranded as the 'dynamical componential model', especially to reflect the importance of feedback loops in the creative process. Amabile and Pratt (2016) made a distinction between creativity and innovation, which resulted in the definition of two separate, yet interacting levels of analysis: individual/small group creativity and organisational innovation. Each level has a similar structure in terms of the representation of the creative/innovation processes, characterised by five stages that span sequentially, from task presentation (by individuals) and agenda setting (by leaders) to outcome assessment. Both levels of analysis are also constituted by three components: motivation to innovate (organisation) or do a task (individual/group); availability of resources (organisation) and skill (individual/group) in the task domain; and innovation management skill (organisation) and creativity-relevant processes. The latter include, for example, cognitive and perceptual styles, and personality traits that may lead to new ideas via, for example, fostering risk-taking or the development of unusual associations (Amabile & Pratt, 2016). Furthermore, Amabile and Pratt (2016) underline the multiplicative nature of the model, meaning that all organisational components are required for innovation to occur, and that the probabilities of innovation increase in tandem with the growth of individual components. Finally, their most recent version of the model recognises as well the importance of a synergy between intrinsic and extrinsic motivation for creativity, affect, and having a sense of progress and meaningfulness with regards to the work being conducted.

More recently, Tanggaard (2019) reflected on organisational creativity based on a number of empirical studies conducted with businesses and cultural organisations in Denmark, and on a conceptualisation of creativity aligned with Glăveanu's (2010a) 'We-paradigm' i.e. as situated and distributed. Thus, she contended that creative organisations require much more than just creative individuals, depending instead "on the distribution of creativity across organisational members, their cooperation and distributed cognition, and their ability to work on the edge of the existing, pointing to the temporal and material dimensions of creativity" (Tanggaard, 2019, p.191). Additionally, Tanggaard

alluded to the importance of learning and cognition for creativity and innovation, proposing that collaborative, supportive structures in the workplace, especially if coupled with systematised views of learning that integrate feedback from end-users, may accelerate processes and make them more agile.

2.7. Summary

In this chapter, I presented a critical overview of the evolution of the conceptualisation of creativity across centuries, dividing it in three distinct paradigms: 'He', 'I', and 'We'. The 'He-paradigm' refers to the earliest conceptualisations of creativity, spanning from ancient Greek and Roman eras to the late 19th century. The lone genius emerged as the dominant symbol of this paradigm, where creativity was believed to be transmitted by divine inspiration – initially – or by genetic endowment – at a later stage. The genius (always a male) distanced himself from the World – often fighting against it – and his creations had a strong impact on society. Such conceptualisations of creativity presented it as accessible only to few individuals, preventing many others from investing in its cultivation, hence contributing to a lack of diversity that still persists nowadays in some areas, like sport.

The 'I-paradigm gained momentum in the mid-20th century and was linked to the beginning of systematic research on creativity, particularly incentivised by Joy Paul Guilford in 1949. This paradigm focused on the study of potential relations between creativity and individual characteristics. Psychometric measures and empirical observations were the most common research methods adopted. The scientific study of eminent creators also developed at this stage. During the 'I-paradigm', many theories and models were proposed to explain creativity, largely influenced by developments in cognitive psychology (e.g. BVSR, Structure of Intellect, *geneplore*). Researchers succeeded in identifying mental components that are important for creativity (e.g. perception, memory, attention). However, the focus on intra-psychic, individual characteristics provided only a limited understanding of a complex phenomenon like creativity, leading to the development of a new field, the social psychology of creativity, and consequently, of the 'We-Paradigm'.

In the first phase of the 'We-paradigm', it was assumed that creativity does not occur in a vacuum and that there are external factors impacting on individual creativity. Several frameworks have been coined to illustrate such impact, like

Csikszentmihalyi's (1999) systems view, which proposed that creativity emerges from the interaction between the individual, social institutions, and the cultural domain. It also helped paving the way for a second – more ecological - phase of the 'We-paradigm'. Inspired by the developing field of cultural psychology, authors like Glăveanu (2012; 2014; 2018), Tanggaard (2013) and Montuori (2019) suggested that creativity should be studied in line with its distributed, situated, and relational nature. Moreover, Montuori (2019) suggested that transdisciplinary research is needed to address the multi-faceted, complex characteristics of the phenomenon. This requires the integration of knowledge from areas traditionally seen as opposite, like cognitive psychology and sociology, and the combination of quantitative, qualitative, and mixed method approaches.

Contemporary approaches to creativity– e.g. organisational creativity - are also departing from individual analysis to consider the phenomenon from multiple, interacting levels, i.e. individual, team, organisational. In the next chapter, I will use the He-I-We paradigms to frame a review of existing literature on creativity in sport. In doing so, I will discuss the implications of research positioning for our understanding of creativity in sport. Furthermore, I will highlight existing gaps and suggest avenues that could be explored to further develop our understanding of creative development in sport.

Chapter Three: Creativity in Sport

3.1. Introduction

The importance of promoting creativity in sporting environments at all levels is widely recognised. From a broader perspective, Santos, Memmert, Sampaio and Leite (2016, p.1) explain that there are currently "many obstacles that restrain the creative potential, such as the lack of street sport, unadjusted training, mechanization of play, decrease of the game enjoyment and a narrow game knowledge". Furthermore, in performance environments, the advent of video analysis and the widespread availability of data on teams and players' behaviours mean that creativity in sport has never been more necessary. It is therefore understandable that many stakeholders are trying to develop alternative approaches that increase unpredictability in individual and collective behaviour in order to be more 'successful' (Yamamoto & Yokohama, 2011 in Torrents et al., 2016). Furthermore, research on sporting creativity has substantially increased in the last two decades (Fardilha & Allen, 2019). Notwithstanding, Rasmussen, Østergaard, and Glăveanu (2017) have criticised prevailing perspectives of sporting creativity that over-emphasise productivity, in-game benefits, and technical expertise, proposing that creativity should instead be re-conceptualised as a developmental resource.

Existing research on creativity in sport is still scarce, but the field has started to develop more rapidly in the past two decades (Memmert, 2010). While most work has been clearly influenced by conceptualisations of creativity proposed by cognitive psychologists, introducing Glăveanu's (2010) 'He-I-We' paradigm provides a useful framework to present and discuss existing research on creativity in sport. Just like with research on 'general' creativity, paradigmatic distinctions should not be seen as chronologically linear or philosophically watertight but rather as rough schematics of core aspects that may assist readers with gaining a better understanding of the existing perspectives on sporting creativity.

3.2. The 'sporting genius'

Although the myth of the 'lone genius' lost traction in general creativity upon the arrival of the Enlightenment, sport, and especially football, still represent fertile ground for mythology (Giulianotti, 1999). Not rarely, athletes and players, mostly male (Gee, 2009), are lauded as heroes or warriors (Lanfranchi, Holt, & Mangan, 2013). Others are branded as divine figures (see figure 1) or geniuses,

whose brilliance surpasses human ability. For example, in the 1996 film ‘Space Jam’, the American basketball player Michael Jordan travelled to the outer space’ to help a team of alien minions, scoring a slam-dunk in the last moment that won the decisive match.

Despite its popularity outside of academia, the figure of the ‘genius’ has been scarcely discussed in the sporting creativity literature. Only three publications have so far been devoted to the topic, and all in the field of sport philosophy (Lacerda & Mumford, 2010; Hopsicker, 2011; Higgins, 2018).

Figure 1: Cristiano Ronaldo on the cover of Portuguese sports newspaper 'Record' (30/06/18), with the headline 'Faith in God: may Ronaldo make the difference'

Lacerda and Mumford (2010) borrowed from the arts to conceptualise the sporting genius as a regular, outstanding innovator, who can ignore conventions, and whose works represent valuable aesthetic contributions. They added that other than adding beauty, the creativity of the genius’ initiatives will tend to, although not always, lead to success.

Sporting genius, in this perspective, is a component of raw talent, whose emergence will depend on the existence of appropriate coach-created environments: “like all abilities and dispositions, genius will only display itself in the right conditions” (2010, p. 189). However, Lacerda and Mumford (2010)

conceded that genius may not be an exclusive attribute of people; it can also characterise individual acts performed by 'non-geniuses'. These acts are described as "a single such innovation but one that was so significant and so successful that they ['non-geniuses'] are called a genius just because of that single act or creation" (2010, p.184). An illustrative example of the latter is Dick Fosbury's high-jump 'flop', which was named after the athlete when he became the first to publicly perform the technique, at the 1968 Mexico City Olympics. Even though others may subsequently be able to replicate such moves – the Fosbury flop rapidly became, and still is today, the most common jumping technique in high-jump - Lacerda and Mumford (2010) claim that the original act carries an added aesthetic value, which ends up justifying a label of 'creative' that replication does not deserve. Such conceptualisation of creativity with an expiry date is in line with Boden's (1994) definition of historical (or h-) creativity.

Hopsicker (2011) characterised the sporting genius as one that is more skilled and more actively imaginative than her/his peers: "the genius possesses richer propositional and practical knowledge of her specific sporting activity, and can draw from this knowledge to create and perform innovative actions winning space and time on the field unavailable to less skilled players" (Hopsicker, 2011, p.114). Notwithstanding, he considered that although sporting geniuses struggle to verbally express the reasons of their perceived superiority to others, there is a path that leads to sporting geniality. This inspired Hopsicker (2011) to move away from Lacerda and Mumford's (2010) illustrations of endowed figures to suggest that "the maturity of sporting geniuses follows parallel developmental paths and experience comparable obstacles and challenges. He introduced three behavioural benchmarks that characterise such pursuit:

- preparation - "the embodying of raw, foundational material that allows the performer to experience more complex and innovative actions" (2011, p.116);
- risk-taking and responsibility – the former referring to the ability to experiment, embrace the risk of failure and rely on the self without giving too much importance to the opinions of others, and the latter addressing the genius' commitment to innovation even in difficult moments and to the positive advancement of her/his field. Hopsicker (2011) argues that this benchmark establishes "the critical distinction

between the creative sports genius and other less venturous and less successful athletes" (p. 119).

- dwelling: the fast, intuitive enactment of different possibilities imagined using a thoroughly developed knowledge-base, which lesser-skilled performers are unable to access.

The conceptualisation of a sporting genius that is developed rather than endowed can be explained by Hopsicker's (2011) reliance on expertise literature, both popular (e.g. Colvin, 2008; Coyle, 2009) and academic (e.g. Ericsson et al., 1993), which has also been embraced and expanded by Higgins (2018). The latter reflected on the career of tennis legend Roger Federer, who he considered a 'Greatest Of All Times (GOAT)'. In opposition to the muscular, impetuous style of Spanish rival Rafael Nadal, Higgins (2018) highlights how Federer "yields his racquet like a paint brush, soundlessly floating across the court and producing subtly ferocious power and guile from his lissom body" (Higgins, 2018, p.297). He proposes that sporting genius requires a combination of expertise, self-belief, creativity, and 'appropriate' risk-taking, which relates to the genius' dispositional ability to know the right moment to try a risky move. With respect to the creativity of sporting geniuses, Higgins (2018) concurs with Hopsicker (2011) to dismiss the idea of divine inspiration, considering it is instead "a consequence of the cultivated manner in which one uniquely inhabits a sporting context" (p.306).

That connection between genius and context led Higgins to coin the term 'performative fit', which results from the alignment of 'biogenetic traits', socio-cultural circumstances, and "a sense of existential belonging within a sporting domain" (p.310). Consequently, the context and the genius tailor each other to a perfect fit, which ultimately advances their sport. Hopsicker (2011) and Higgins (2018) contributed to a redefinition of sporting genius as more human and less god-like, emphasising as well the relevance of the context, something not so clear in the conceptualisation suggested by Lacerda and Mumford (2010). Moreover, they place an emphasis on the uniqueness of an individual who possesses certain dispositions that, if appropriately developed, allow her/him to emerge above the rest. Indeed, Hopsicker's (2011, p. 123) claim that "it is ultimately the seminal ability of the sports genius to recognize sequences or patterns of play situations and anticipate multiple solutions to those problems", hints a transition to a new reflective frame, the 'I-paradigm' (Glăveanu, 2010a).

3.3. The ‘I-paradigm’ in sporting creativity

The influence of cognitive psychology and the ‘I-paradigm’ can be seen in much of the reductionist work examining creativity in sport (Vaughan et al., 2019). This extends to the methodologies employed (e.g. experimental, lab-based), correlates examined (e.g. attention, pattern recognition, working memory), assessment tools developed and used (e.g., paper-and-pencil tests, video tasks, standardised motor skill and game-based tests), and to the conceptualisation of creativity in sport itself. However, positivist perspectives provide only a limited understanding of sporting creativity, other than having low ‘real-world’ applicability (Vaughan et al., 2019), just as occurs with similar investigations on ‘general’ creativity. This does not mean they should be dismissed, because over the past decades reductionist approaches have generated valuable contributions to the identification of correlates that may help explaining sporting creativity and its development (e.g. inattentional blindness, deliberate practice, and deliberate play).

In a recent comprehensive review of the literature on sporting creativity, Fardilha and Allen (2019) highlighted the prevalence of quantitative, positivist-informed contributions: from the 48 publications included in the review, 29 (60.42%) were based on quantitative data, 13 were position papers (27.08%) and only 4 (8.33%) collected qualitative data. Therefore, the following sub-sections will be devoted to a detailed review of the conceptualisation, correlates, and development strategies of creativity in sport, being for the most part a review of a positivist orientation on the topic, heavily inspired by mainstream, cognitive psychology.

3.3.1. Conceptualisations of sporting creativity

Investigating the way creativity is defined is essential, because the conceptualisation of the term will ultimately have important implications for how creativity is assessed and developed. Similarly to ‘general’ creativity, where Kampylis and Valtanen (2010) found at least 42 explicit definitions, in sporting creativity there is also no consensus on what exactly the term refers to. Brown and Gaynor (1967) were the first to discuss ‘athletic creativity’, claiming that it needed to be expressed through non-verbal motor skills (creativity *in* action as opposed to creativity *about action*). These creative motor skills could be expressed individually or collectively, and the level of creative potential of an action depended on its complexity. For example, running 100 meters in a straight

line had less creative potential (i.e., less different possibilities for action) than playing a game of basketball. This distinction is similar to the one proposed by Harrison (2016), between 'closed' and 'open' skills. According to Harrison, closed skills refer to self-produced stimuli which are not affected by other participants - "usually non-creative" (2016, p. 2) -, like the serve in tennis or the free-throw in basketball. Open skills refer to activities whose nature is mostly unstructured and reliant on the involvement of other participants, implying external stimuli. Harrison (2016) suggests that "it is in the notion of 'open skills' that improvisatory creativity resides" (p.2).

Brown and Gaynor (1967) also argued that the creative processes in sport operate in much the same way – preconscious incubation preceding the emergence of the creative action - as those of other areas which do not require physical exertion. However, recent neuroscientific findings on the impact of mechanisms of brain inhibition on creative performance suggest this may not be the case. In their reticular-activating hypofrontality (RAH) model of acute exercise, Dietrich and Audiffren (2011) argue that the brain uses two different cognitive systems to acquire and represent information: implicit and explicit. On the one hand, the explicit system deals with abstraction and complex problem-solving, and is linked to more traditional forms of creative expression – e.g. writing, musical composition. It is rule-based, relates to conscious awareness, and can be expressed verbally. On the other hand, the implicit system, to which motor skills are related, relies heavily on procedural knowledge, which cannot be verbalised, depending therefore on task performance to be expressed. Thus, sporting creativity, in part, may operate differently to creativity in some other domains because the expression of creativity is through action rather than about action. Furthermore, the unstructured nature of many sports, particularly team sports, demands constant reaction and adaptation to different stimuli. Real-time creativity is then limited by time constraints and is necessarily spontaneous (Harrison, 2016). This has implications for the conceptualisation and assessment of sporting creativity as well as the design of interventions to facilitate creativity in sport.

The most used definition of sporting creativity - *tactical creativity* - was coined by Memmert (2011) and resulted from the adaptation of Sternberg and Lubart's investment model (1991). Tactical creativity refers to "those varying, rare, flexible decisions that play an important role in team ball sports like football,

basketball, field hockey, and handball" (Memmert, 2011, p. 94). It is very much an adaptation of the concept of divergent thinking (Guilford, 1956), using inclusively the same evaluative criteria of originality, fluency, and flexibility. It differs from game intelligence or convergent tactical thinking, that relate exclusively to the selection of the most effective solutions for a given problem (Memmert, 2010). Instead, tactical creativity emphasises the ability of players to generate the highest possible number of different motor solutions for a problem. Furthermore, it is proposed that tactical creativity can only occur in the offensive phase of a game, and not in defence (Memmert, Baker & Bertsch, 2010; Kempe & Memmert, 2018).

The focus on attacking players and play has influenced the research conducted. For example, as part of participant selection, Memmert et al. (2010) asked coaches to identify the most creative attackers and least creative defenders. Then, they studied their developmental pathways, finding that the more creative players (attackers) had spent significantly more time (albeit only marginally) in their main sport (football) in comparison their less creative colleagues (defenders), including both unstructured play and organised training activities. In this study direct comparisons were made between players with different roles - attackers and defenders - who occupy different areas of the pitch and perform different actions. This may have had an impact on the results, therefore caution is recommended in the interpretation of findings. In another study, Kempe and Memmert (2018) focused on the creativity of the last eight actions leading to a goal scored in open play in football World Cups and European Championship. Based on their findings, they concluded that creativity is particularly important for attackers and that creativity is "a decisive factor for success in soccer" (2018, p.4). However, there is a lack of consistency in participant sampling, which is especially important in experimental designs, as it can impact the validity of findings.

Although there appears to be some consensus that creativity is important for sport, there are varying conceptualisations about the term. Some focus on ideation and variability (e.g. Memmert's tactical creativity), while others emphasise productivity (Brown & Gaynor, 1967) or real-time improvisation (Harrison, 2016) as the key aspect for sporting creativity. Moreover, while most positivist-inspired research to date has clear links to earlier conceptualisations of creativity coined by

cognitive psychologists, recent neuroscientific findings (e.g. Dietrich & Audiffren, 2011) point towards different mechanisms for creative actions. Clarifying how sporting creativity is conceptualised is important because it has implications on how it is operationalised, assessed, and developed. Therefore, the lack of consensus among researchers presents a current challenge, which could benefit from a higher engagement of practitioners. Their in-depth knowledge of the field may not lead to a *one-size-fits-all* definition – which would be undesirable – but instead result in more ecological, impactful studies who could prove decisive in closing the scholarly gap.

3.3.2. Correlates of sporting creativity

Prior to the creation of the expression 'tactical creativity', investigations of creativity in sport focused on identifying its potential correlates. Research examining giftedness and creativity has demonstrated that gifted children (IQ>130) tend to express creative behaviour earlier than their non-gifted peers. For example, Memmert (2006) investigated the creative performance of children who, once a week and for six months, underwent a sports enrichment programme which consisted mainly of diversified team ball sports practice (using feet, hands, and a hockey stick) in game forms. Memmert found that while there was no significant improvement in the gifted control group, the gifted experimental group showed a significant increase in creative performance after six months. The non-gifted experimental group did not show a significant improvement as a result of the intervention. However, in a different study with non-gifted children, Memmert and Roth (2007) showed a 40% improvement in creative performance after a 15-month training period. Memmert (2006) explained that the accelerated improvement of the gifted group in the shorter programme was a result of "faster automation of individual thought processes…This frees attention capacity for other tasks." (p.108) Therefore, creativity is not a characteristic of only gifted children: it can be developed by others although it may take longer.

With regards to research linking creativity and attention, Brown and Gaynor (1967) highlighted the crucial role of extreme awareness by suggesting that "the athlete who is most creative is most aware, most in tune with reality as it exists. Being aware of the single large problem (the game), he [sic] is able to recognise and to act on smaller problems which arise continually" (1967, p.157). It is therefore perhaps unsurprising that breadth of attention as a correlate of creativity

has been the focus of most research to date (e.g., Memmert, 2007; Memmert & Furley, 2007; Furley, Memmert & Heller, 2010; Moraru et al., 2016). This work has focused mainly on inattentional blindness, which relates to the diversion of attention where people fail to notice something unexpected, even when it is in their field of view (Memmert, 2007). In a series of experiments, Memmert and Furley (2007) examined inattentional blindness in young handball players, using a video task. They were interested in participants' ability to notice an unmarked player that appeared unexpectedly in the game and the effect of different instructions and actions of the unmarked player. They found that when there were no other conditions, 45% of participants failed to notice the unmarked player, however, when one group was given closed-end instructions 83% of participants failed to notice the unmarked player. This contrasted with only 17% of those participants who were not given these instructions and still failed to notice the player. Furthermore, when the unmarked player waved his arms, only 6% of participants failed to notice him.

Connecting inattentional blindness with creative performance, Memmert (2011) examined the relationship between attention and experience in both general and sporting creative performances. The study involved skilled (with a previous degree of experience in team invasion sports) and non-skilled (with no previous experience) handball players aged between 7 and 13 years. He found that inattentional blindness was higher in the youngest children (7 years of age) and the performance of attention tasks improved in children between the ages of 8 and 13 years. Memmert also noted an evident plateau in the children between 10 and 13 years, which was attributed to the decrease in the "absolute number and density of synapses as one grows older, making it harder to improve creative thinking" (Memmert, 2011, p.93).

Adding further evidence of the relationship between attention and creative performance, Moraru, Memmert, and van der Kamp (2016) manipulated participants' breadth of attention. Participants in the broad focus group were more inclined to use different modes of locomotion (flexibility), but not invest as much time on finding solutions within a particular mode (persistence). A broader focus did not significantly enhance originality, which is in contrast to results of previous studies on divergent thinking (e.g., Memmert, 2011). This can be explained by the increased difficulty of performing a wider range of motor skills (which is largely

limited by existing motor ability) in comparison to thinking (ideation) skills: “if motor ability is insufficient (e.g., only a few people can walk on hands), then the thought of action cannot be performed” (p.10).

Furthermore, Memmert (2006) demonstrated that a six-month attention-broadening training program had a positive effect on the creative performance of children. He compared an attention-narrowing group (with teachers giving explicit tactical instructions and corrections constantly during play) with an attention-broadening group (with teachers only giving general advice about the games and their rules, and not providing any feedback during play). Memmert found that only the attention-broadening group considerably improved their general creative performance. An association between creative performance and visual search behaviours has also been demonstrated by Roca, Ford, and Memmert (2018) who used a portable eye-movement registration system to examine creativity in decision-making and visual search behaviours of expert football players during simulated 11-a-side matches. They found that more creative players when compared to their lesser creative counterparts, displayed a broader attentional focus which included a higher number of fixations, but of shorter duration. They were also able to perceive earlier the location of unmarked teammates and opponents.

Other than attention and giftedness, the relationships between creativity and a small number of other traits and skills have been examined. These include working memory, morning-eveningness personality, coping, and regulatory focus. Researchers have examined the role of working memory in sporting creativity – both creative thinking and creative action. However, no evidence has been found that working memory interferes with creative ability (Furley & Memmert, 2015; Moraru, Memmert, & van der Kamp, 2016). With regards to morningness-eveningness personality, Cavallera, Boari, Labbrozzi and Del Bello (2011) found that participants with an intermediate (not morningness nor eveningness-oriented) personality type had significant positive correlations between the number of hours of sport activity per week and scores of elaboration (measured through the Torrance Test of Creative Thinking - TTCT). Creative thinking performance, however, was independent of gender and personality typology. In their study of junior female handball players, Igorov, Predoiu, Predoiu, and Igorov (2016) found a significant positive correlation between fluency and positive reinterpretation as a

coping strategy, but the relationship between coping and flexibility was not significant. They speculated that these findings relate to situations in which athletes try to find positive aspects in undesirable situations, often through the recollection of past successful performances. In relation to regulatory focus, Memmert, Hüttermann, and Orliczek (2013) found that adult male football players with a promotion (aspirational) focus performed better in a sport-specific divergent thinking video task than those with a prevention (duty-oriented) focus, which corroborates repeated claims (e.g., Hopsicker, 2011; Ďuriček, 1992) that risk-taking and open-mindedness enable creative behaviour, and an avoidance focus may constrain creative behaviour. Hüttermann, Nerb, and Memmert (2018) have recently replicated the earlier study by Memmert, Hüttermann, and Orliczek (2013), to investigate the relationship between regulatory focus, expectations, and performance among a more experienced sample. While promotion-focused players displayed, once again, significantly higher values in terms of creativity, there was no main effect for expectation or any significant interaction.

In summary, research focused on the identification of correlates of creativity has explored several possibilities, but only a few traits and skills appear thus far to play a significant influence on creative performance, i.e. attention and pattern recognition. Although most sports considered were team sports, researchers appear to align with the 'I-paradigm' assumption that creativity is exclusively an individual characteristic. Moreover, creativity is treated as innate, in terms of a certain degree of pre-existing potential possessed by individuals, which can be developed with training.

3.3.3. Assessing correlates of sporting creativity

Researchers of sporting creativity have made considerable efforts to design and implement assessment tasks, which draw mostly from earlier research inspired by cognitive traditions. Several different pencil and paper tests of creative thinking have been used, either in part or in full. One of the most commonly employed measures of creative behaviour is the TTCT. It exists in two formats – figural and verbal – and assesses creative thinking through four components: fluency, flexibility, and originality, plus elaboration, i.e. amount of detail in responses (Cavallera et al, 2011; Veraksa & Gorovaya, 2011; Bowers, Green, Hemme, & Chalip, 2014; Santos et al., 2017). The main advantage of the TTCT is that it is one of the few valid and reliable tests of divergent thinking (Kim, 2011).

Others tests that have been employed include Roco's (2004) Imagination and Creativity Test (e.g., Igorov et al., 2016), and Krampen et al.'s (1996) Divergent Thinking Test (Memmert, 2007). However, the very small sample (n=11) and lack of detailed information on Roco's (2004) test result in limited generalisability of its findings. Moreover, all tests are tests of generalist *thinking* expressed verbally or through drawing, not a measurement of physical *doing*.

The use of video and monitor tasks to examine the relationship between sporting creativity and other cognitive skills or traits – e.g. attention, working memory, visual search behaviour, regulatory focus – was proposed and adopted by Memmert and colleagues (Memmert, 2011; Memmert, Hüttermann, & Orliczek, 2013; Furley & Memmert, 2015; Roca, Ford & Memmert, 2018; Hüttermann, Nerb, & Memmert, 2018). Memmert (2015) suggests that video tasks are more representative of sport when compared to paper-and-pencil tests. He adds that although standardised video tasks are less complex, they have less confounding variables, and the selection of clips shown to participants can be adjusted to reflect certain situations, as a way of increasing the specificity of assessment tasks. These video and monitor tasks involve participants watching videos of sporting gameplay and then being asked to provide possible attacking options. For example, in a handball-specific task (Memmert, 2011), participants watched five videos of a game involving four attackers and four defenders. After one minute, the video would stop, and the last frame would remain on the screen. Participants would then be asked to imagine they were an attacker and indicated all potential opportunities that could lead to a goal. The proposed options are assessed for creativity using traditional criteria of originality, flexibility, and fluency. A football-specific video task has also been developed. It is composed of 20 different football attacking scenes from 46 Bundesliga 1 and 2 matches (Germany, season 2010/2011), selected by experienced certified coaches (Memmert, Hüttermann, & Orliczek, 2013; Furley & Memmert, 2015; Hüttermann, Nerb, & Memmert, 2018).

Roca, Ford, and Memmert (2018) acknowledged the limited physical realism of these tasks, which "might alter the natural role of the underlying perceptual-cognitive processes underpinning players' creative behaviour" (p.2). They proposed instead the adaptation of Furley and Memmert's (2015) task to life-size-video based simulations in which participants had to play an actual ball

in addition to providing a verbal response. However, despite in different degrees, video tasks still focus on divergent thinking as the only measure of creative ability. Furthermore, like paper-and-pencil tests, most of these tasks do not allow for a realistic assessment of sporting creativity *in action.* To mitigate those limitations, performance-based situation tests, where participants' actual performance is assessed for creativity, have been developed and employed by researchers (e.g., Memmert, 2007; Torrents et al., 2016). For example, Moraru, Memmert, and van der Kamp (2016), used an agility ladder in a divergent doing task. Participants were asked to perform the highest possible number of different actions on the agility ladder, i.e., using their feet and hands for stepping, hopping, skipping, walking, and so forth. While this approach is arguably more representative of creativity in action compared with paper and pencil tests and video tasks when considering its use, researchers perhaps should ask how well it represents creativity in specific sporting contexts.

The use of small-sided team formats is an alternative that has enhanced representativeness in comparison to the agility ladder, as it tests players in actual game forms. Criteria of originality, flexibility, and fluency are used to assess performance, with scores being averaged into a single measure of creativity. For example, Memmert and Roth (2003) created *game-test situations* (GTS) where creative performance is assessed through actions of participants during small-sided games named *orienting and supporting* and *identifying gaps* (for a detailed description see Memmert, 2006). In Memmert and Roth (2007), children performed with hands, feet, and a hockey stick, but in other studies, only one of the skills was evaluated (e.g., Memmert, 2010). Along similar lines, Torrents and colleagues (2016) examined differences in exploratory behaviour motivated by numerical superiority, equality, or inferiority with 44 football players (22 professional and 22 amateur players) using small-sided games (4 vs. 3, 4 vs. 5, and 4 vs. 7). An observation instrument (adapted from Owen et al., 2014, and Costa et al., 2011) was used to record the possible actions from attackers with the ball (e.g., run to the ball, control, pass, shoot) or without the ball (e.g. wall, support, unmark) and from defenders (e.g. press, delay, dissuade). Santos and colleagues (Santos et al., 2017; Santos et al., 2018) also used small-sided games and an observation instrument (Creativity Behavior Assessment in Team Sports - CBATS) to assess in-game individual (passing, dribbling and shooting actions)

and collective behaviour (regularity of team movements and distance between players which was assessed through GPS measurements). A creative behaviour score was established and included attempts – defined as the effort to perform different actions, successful or unsuccessfully -, fluency – the ability to execute the highest possible number of successful movement actions, and versatility – the ability to generate a diversity of actions within the same category, e.g. different types of passing or shooting.

The design and use of game-based situations and accompanying observation tools to assess sporting creative behaviour is a major development with regards to task representativeness and ecological validity, particularly when it includes assessment of individual as well as collective behaviours (e.g., Santos et al., 2017; 2018). Only Torrents and colleagues (2016) included creative defensive behaviour, although they did not include goalkeepers, which limits our understanding of sporting creativity in all roles and phases of the game. Furthermore, Santos and colleagues (2017; 2018) and Memmert and Roth (2007) only measured creativity in situations of numerical equality or superiority. However, Torrents and colleagues (2016) found that numerical inferiority might lead to higher exploratory behaviour.

Memmert (2015; 2017) has proposed the use of game observation of real matches as a new standard to evaluate tactical performance due to its “very high ecological validity” (p.482). These observations can be aided by gameplay protocols which combine quantitative (e.g., frequency of certain behaviours) and qualitative components (the subjective, yet knowledgeable, opinions of experts). Finally, Memmert (2017) suggests that technology can play an essential role in analysing creative behaviour. For example, using neural networks to categorise action processes in team sports (e.g., Memmert & Perl, 2009).

The efforts to make the assessment of creative performance in sport more representative are clear. From pencil-and-paper tasks to game observations, researchers have made efforts to increase the ecological validity of assessment tools and tasks. However, such assessments remain limited, as the majority adopt decontextualised views of creativity – typical of the ‘I-paradigm’ -, which ignore the situated, distributed, and relational nature of the phenomenon (Tanggaard, 2013). Furthermore, there is an exclusive focus on attacking players, deemed as

creative, and there is no recognition of the potential of defenders to be creative, nor of their ability to condition the creative expression of their opponents.

3.3.4. Developing Creativity

Understanding how to develop creative players is one of the key ambitions of academics and practitioners. It is then unsurprising that a growing body of literature on the topic is emerging across different paradigms. Most authors inspired by a cognitive approach to creativity have focused on examining the impact on creative development of strategies linked to correlates like attention and expertise, e.g. comparing deliberate practice and deliberate play. Deliberate practice is "the engagement in practice activities with a clear goal of improving a specific aspect of performance beyond its current level" (Ericsson, 2017, p. 4). In turn, deliberate play, which is usually fostered during sampling years (ages 6-13), does not intentionally focus on performance improvement, prioritising instead "developmental physical activities that are intrinsically motivating, provide immediate gratification, and are specifically designed to maximize enjoyment" (Berry, Abernethy, & Côté, 2008, p. 687).

After a six-month intervention, Memmert (2006) found that deliberate play had a positive impact on the tactical creative performance of gifted children. Similarly, in a field study involving Brazilian youth basketball players, Greco, Memmert, and Morales (2010) discovered that unstructured play significantly improved measures of tactical creativity and tactical intelligence (i.e., finding the most appropriate solution for a problem). In contrast, in an examination of professional youth football academy coaches and players' skill-ratings over 5 years, Hendry and colleagues (2018) found that while ratings of top players were positively related to practice, they were negatively related to the proportion of play vs. practice. Hours spent in play were not correlated with ratings of any skill, including creativity. The authors concluded that "there may be benefits to participation in coach-led practice and play from an early age, potentially due to the need to accumulate a high volume of sport-specific activity, as well as sufficient variations in practice" (2018, p.7).

Despite some studies highlighting a more pronounced influence of deliberate practice or deliberate play on creative development, most authors (e.g., Memmert, Baker & Bertsch, 2010; Bowers et al., 2014) concur that the combination of different strategies may be essential for the development of

sporting creativity. Moreover, Bowers and colleagues (2014) suggest that improving creativity does not require “a complete re-imagining of entrenched youth sport development models” (p.325). It could be achieved through the redistribution of time allocated to each activity. While important, it should be recognised that strategies like deliberate practice or deliberate play are only partial influences in the overall development of children. For example, in Bowers and colleagues’ (2014) work, sporting activities accounted for only 30% of the total leisure time of participants. No information was provided on what they did for the remaining 70% of the time and what impact this may have had on creative development.

While much of the research on sporting creativity has hitherto focused on isolating traits and processes, there have been recent efforts to design and introduce macro-structures (e.g., frameworks, programmes) for the development of creativity, like the Tactical Creativity Approach (TCA) (Memmert, 2015), the Creative Development Framework (CDF) - which includes the Skills4Genius programme (Santos et al. 2016) -, and The Creative Soccer Platform (TCSP) (Rasmussen & Østergaard, 2016). Preliminary research, although limited, suggests these programmes do contribute to the development of sporting creativity. In 2015, Memmert coined the Tactical Creativity Approach, which represents the translation of his key findings into an operational framework. The TCA (Memmert, 2015) is composed of 6 D’s: deliberate-play, 1-dimension games, diversification, deliberate coaching, deliberate motivation, and deliberate practice. Memmert (2015; 2017) proposes that particular emphasis is placed on the first four Ds during earlier stages of player development. Deliberate play relates to play without instruction or feedback, which may result in players trying more different solutions to a problem. One-dimension games are basic game forms aimed explicitly at improving tactical components. They are based on “clearly defined games ideas, a fixed number of players, and defined rules and environmental conditions” (Memmert, 2015, p.51). Deliberate coaching refers to the avoidance of instructions provided by coaches or teachers during 1-Dimensional games that may prevent players from keeping a broad attentional focus. Diversification promotes the contact with different sports and different stimuli within the same sport (e.g., playing with balls of different sizes, shapes, and materials in football). At more advanced stages of player development,

Memmert (2015) highlights the importance of deliberate motivation and deliberate practice. With regards to motivation, the TCA favours promotion instructions, which, according to earlier research by Memmert, Hüttermann, and Orliczek (2013), may favour creative expression. Finally, deliberate practice can be developed through sport-specific, task-centred practice “to explore seldom but adequate solutions” (p.96).

The Creative Development Framework (CDF) is another model for the long-term development of creative behaviour in team sports. Development is divided into five stages where free-play and diversification are encouraged at the earlier stages of youth development, advocating a transition to specialisation that is completed around the age of 16. The CDF puts an emphasis on fundamental movement skills (Smith, 2014), fundamental game skills (Smith, 2014), non-linear pedagogy (Chow, 2013), differential learning (Schöllhorn et al., 2009), teaching games for understanding (Tan, Chow, & Davids, 2012), and constraints-led approach (Hristovski et al., 2011), as ways of developing creative behaviour in sport. One of the key aspects of this model is the belief that sporting creativity does not depend solely on skill mastery, but also relies on the ability to think creatively.

The CDF has been partially tested (‘Explorer’ phase only – Skills4Genius programme) with Portuguese primary school children (Santos, Jimenez, Sampaio & Leite, 2017). Findings suggest the programme can lead to improvements in general creative thinking, increased fluency, elaboration, and originality. Effects on motor skills are less clear. However, improvements were demonstrated for in-game creativity (attempts, fluency, and versatility). Another empirical study based on the CDF (Santos et al., 2018) examined the impact of differential learning, with an emphasis on small-sided games, as an enhancement strategy for creative behaviour in youth football. While the control groups did not alter their practice routine, the experimental groups took part in a differential learning program, with three 30-minute training sessions per week, taking place at the beginning of their team’s training session. The training programme involved playing small sided games with a constant variation of conditions such as balanced and unbalanced number of players, different balls, pitches with different shapes, and numerous body constraints (e.g., visual occlusion, hands behind head). Creative performance was assessed through the CBATS (Santos et al., 2017). The experimental group

demonstrated a significant reduction in failed actions, while increasing attempts and versatility.

The Creative Soccer Platform (TCSP) (Rasmussen & Østergaard, 2016), based on Byrge and Hansen's work (2009, 2014) in educational settings, has four pillars: task-focus, parallel thinking, lateral thinking, and no experienced judgement. The programme focuses on "establishing a creative environment (i.e., a playful atmosphere) by facilitating creative processes (i.e., soccer-specific creativity exercises) where players try to develop creative products (e.g., new feints, dribbles or first touches) and train their creative abilities (not fearing to make mistakes)" (p.9). The impact of the TCSP was assessed through a focus group with some players and an interview with the coach. Rasmussen and Østergaard (2016) identified some limitations such as initial resistance to change and the difficulty of operating in a hybrid system (after the 'creativity' training in the first half of the session, players resumed regular structured training). They found that experiencing a variety of actions with the ball during the creativity exercises increased the chances of players trying different actions in competitive matches.

Richard, Abdulla, and Runco (2017) explored the influence of skill level, experience, and hours of sport training and participation on everyday creativity (e.g. divergent thinking related to diary and distraction management, creative attitude and values) on a sample of 208 Canadian athletes (21 intermediate, 73 advanced, and 114 experts, including Olympic and world-class competitors) aged between 14 and 37, across 17 different sports. Richard and colleagues found that expert athletes displayed significantly higher cognitive flexibility, while athletes who engaged in a higher number of sports were significantly more creative in comparison to those who only practised one sport. Thus, they concluded that diversification is key for creative development.

More recently, a different line of research has been opened by Furley and Memmert (2018), who examined the impact of social priming on creative thinking, i.e., the use of world-class creative players as role models. This study, with adult amateur football players, demonstrated that asking participants to write down the characteristics of a so-called creative player (e.g., Lionel Messi) and imagine a typical situation that this player would be involved in led to more creative responses to attacking scenarios. Furley and Memmert (2018) concluded

that it is possible to prime creative thinking in football players, by activating "cognitive representations of creativity which in turn can activate associated mindsets, information processing modes, and response tendencies" (2018, p.7). Notwithstanding, despite encouraging initial results, Memmert & Roth (2007) explain that this is a lengthy process. Thus, more research is needed to evaluate the long-term effects of the programmes and strategies proposed for in-game creative development. Furthermore, 'creativity training' in both the CDF and TCSP was limited to a small part of training sessions. Future research could explore the effects of programmes in settings that do not treat creative training as an appendix or an isolated section of a session but instead adopt the philosophical underpinnings of creative development as an orienting matrix for the whole sporting environment. This could consequently impact, among others, session planning, delivery, and reflection.

Research on sporting creativity arguably positioned within the 'I-Paradigm' has been the most prolific to date. Investigators have been largely inspired by earlier work of cognitive psychologists and their reductionist conceptualisations of creativity, borrowing constructions like divergent thinking and emphasising the role of the mind as a precursor of creative action. Therefore, the investigation of intra-psychic correlates of creativity is not surprising. Moreover, most strategies and programmes for creative development that have been proposed are associated with technical skill, expertise, pattern recognition and attention. However, in the last decade the idea of body-mind integration (Hristovski et al. 2011; Hristovski et al., 2012; Campos, 2014; Krein & Ilundáin-Agurruza, 2017; Ilundáin-Agurruza, 2017), has gained traction. It is opposed to the traditional privileging of the mind, which has important implications for the conceptualisation and development of sporting creativity. This shift has also been accompanied by Martin and Cox (2016), who paved the way for the use of alternative research approaches with regards to creativity in sport. They did so by using life positioning analysis (LPA) to investigate the early life experiences of former NBA star Steve Nash. Moving beyond a focus on practice habits and attention-concentration traits and skills, Martin and Cox (2016) found other factors that may have contributed to Nash's creative development: parental influence, intrinsic motivation, peer support, and self-determination. Such holistic (e.g. Martin & Cox, 2016,), integrative (e.g.

Hristovski et al., 2012) perspectives suggest the field – or at least part of it - is transitioning to a 'We-paradigm'.

3.4. Extending the 'We-Paradigm' to Sport

Challenging established ideas of the brain as the trigger of all action, Gibson (1979) argued that information, i.e., spatiotemporally patterned energy flow from the environment, is the critical element to locomotion and manipulation and that the interaction between the individual and the environment was critical. In this perception-action system, meaning comes from the individual's ability to detect information in the environment (Araújo, Hristovski, Seifert, Carvalho, & Davids, 2017). Furthermore, physical exploration of the landscape of action possibilities may result in the discovery or emergence of a novel action. Orth, van der Kamp, Memmert, and Savelsbergh (2017) also emphasise the importance of adaptability to the environment in motor creativity, which they define as "new ways of acting adaptive or acting adaptively in new situations" (p.2). As such "the emergence of highly novel movement forms requires a self-organising system which, under suitable boundary conditions, can create new behavioural structures" (Hristovski et al., 2011, p. 177). These constraints offer the individual opportunities for action, which Gibson (1979) termed *affordances.* For example, Tanggaard, Laursen, & Szulevicz (2016) showed that different material constraints led to new possibilities for creative expression, i.e., using handballs made from synthetic polyurethane or handballs made from leather provided different affordances. The synthetic ball allowed for an improved grip, which in turn increased the possibilities for attackers in terms of passing - e.g. making it easier to delay the shot -, controlling - e.g. catching the ball with one hand became more likely -, and shooting – by enhancing opportunities for variability via screw balls and delayed shots for example (Tanggaard, Laursen, & Szulevicz, 2016).

3.4.1. Sporting creativity and the importance of the context

To date, little research on creativity in sport has addressed its situated nature. This is problematic because while there may still be an overall convergence on the general criteria that make an action creative (e.g., novel, functional, surprising), the transition to the We-Paradigm suggests that deciding on the appropriateness and novelty of an action or idea is invariably conditioned by the context, experiences and beliefs of those judging them. Thus, what is valued in a given time and location will determine whether an action is indeed

novel, surprising, and appropriate for a given situation (Sternberg, 2019). For example, even the most common actions performed by a handball player in Germany, where the sport is widely developed, are likely to be considered original by most of the British population, who are almost entirely unfamiliar to the sport. The degree of appropriateness or originality of an action depends on who is judging it and on his/her previous experiences. A football coach that favours positional attacking may consider the Spanish style of playing *tiki-taka* (a style of play associated with Spain and FC Barcelona that favours short passing and aims to keep a high percentage of ball possession) a useful strategy, while another, favouring a direct game, may disagree.

Furthermore, professional football coach José Tavares (in Tamarit, 2016) contends that all players can be creative, in any phase of the game, with and without the ball. Therefore, if creative performance is to be evaluated it should consider the requirements, opportunities and limitations associated with each player's position within a given environment. This would mean that, defenders could produce creative actions within the specificity of their roles (e.g. centre-backs, full-backs), while a winger would do the same, perhaps through different strategies, more adapted to the position's requirements. Such evaluation would also be dependent on the team's overarching game model – a specific way of playing influenced by myriad factors, like the coach's preferences and previous experiences, player characteristics, the club's history or national culture. Furthermore, the interdependence between attackers and defenders is supported by the work of Aggerholm, Jespersen, and Ronglan (2011), who performed a contextual analysis of the feint in association football. They concluded that other than self-awareness and the cultivation of embodied habits, to be creative "it is also necessary to be absorbed in the other and transcend his or her expectations" (2011, p. 343). Aggerholm and colleagues suggest that in-game creativity is relational, as it depends not only on individual or cooperative efforts within one team but also from this relationship with the opposition - termed by Aggerholm and colleagues as *the duel*. Thus, while developing a wide motor repertoire can be instrumental in increasing players' technical toolkit and augmenting their range of possible solutions to a given problem posed by the opposition during play, variables of space and time can also have a crucial role in deceiving or overcoming their expectations (e.g. through variations in acceleration and

braking). Rasmussen, Østergaard and Glăveanu (2017) question if the surprising action should be *really* considered creative, suggesting that it "might be habitual to the actor and therefore only *appears* creative for opponent(s) or observer(s)" (p.4).

Therefore, due to the multi-faceted constructions of creativity in sport, in the future researchers should aim to be clearer about their conceptualisations of creativity and describe the social-cultural context in which the action takes place. This could include – although not be limited to – the domain in which a sporting activity is taking place, e.g. recreational, participation, performance; the importance of sport in a given culture (e.g. is sport a priority in a given country or region? Does it play an important role in people's everyday lives?); and the geographical and weather conditions that may favour or hinder the practice of certain sports (e.g. the presence of snow favouring the practice of winter sports). Furthermore, researchers should disclose their previous experiences and assumptions, in order to increase the trustworthiness of interpretations. Finally, exploring the relational dimension of creativity in sport implies recognising the role – and impact - of other members of the sporting community in processes of creative development. To date, such recognition has been very limited. An exception is perhaps where coaches have been used as experts in some studies to assess the originality of individual performances (e.g. Memmert & Roth, 2007).

The use of experts has been proposed and widely adopted to mitigate the relativism of evaluations, including in sporting creativity (e.g., Memmert et al., 2013; Torrents et al., 2016; Hendry et al., 2018). However, this solution is criticised by Runco and Chand (1994), who question why expert ratings should deserve higher credit than self-reported, peer, or teacher evaluations. Baer and Kaufman (2019, p.29) explain that "if one assumes that there is no absolute objective standard for determining the creativity of works in a domain, the judgement of the experts in that domain matters more than the results of some externally imposed rubric." Thus, it must be recognised that coaches (and scouts) are central figures in the identification and development of creativity in sport, having critical roles in shaping players' experiences and opportunities. To date however only three studies have examined their perceptions of creativity and its development (Oh, Joung, Kim, Choi, Kim, & Sung, 2010; Leso, Dias, Ferreira & Gama, 2017; Rasmussen, Glăveanu, & Østergaard, 2019).

Distributing open-ended questionnaires to Korean football coaches completing their C and B licenses, Oh and colleagues found that coaches associated “unpredictability, adaptability, improvisation, and mediating” (2010, p.65) with football creativity and prioritised the promotion of fundamental skills and self-determination as tools for its development. Moreover, coaches indicated a lack of knowledge on how to teach creativity and revealed that they used personal experiences to overcome that gap. This study also identified several challenges to the improvement of sporting creativity, such as autocratic coaching styles, a focus on results which put coaches under pressure to win matches, the league systems, and a lack of appropriate training facilities.

Leso and colleagues (2017) examined football coaches’ perceptions of creativity and game intelligence through a questionnaire completed by 34 coaches of a Portuguese club, containing a set of closed questions. They established positive relations between intelligence and problem-solving, anticipation, spontaneity, inspiration, and instinct. Furthermore, creativity was associated with feeling, unconsciousness, and magical thinking. In turn, Rasmussen, Glăveanu, and Østergaard (2019) conducted a phenomenographical analysis on the multi-faceted role of creativity with 18 coaches belonging to a Danish elite football academy. They found that in the context of a single club, coaches attributed 15 different meanings to creativity - surgicality, productivity, navigation, choreography, circus, design, survival, deception, independence, co-creation, style, exploration, transgression, magic, and invention - influenced by their worldviews, beliefs, and previous experiences.

Understanding coaches’ assumptions regarding creativity may be crucial for its promotion because there is a “transactional relationship between conceptions and practices.” (Rasmussen, Glăveanu, & Østergaard, 2019, p.7). The recognition of that interaction and its potential consequences has led these authors to criticise perspectives of sporting creativity that exclusively emphasise performance, in-game benefits, and technical expertise. Instead, Rasmussen, Østergaard and Glăveanu (2017) propose that creativity should be considered as a developmental resource and argue that current performance-oriented visions may lead to missed opportunities for taking advantage of the broader educational benefits that may arise from simply participating in creative activities, such as increased self-confidence and self-esteem.

3.4.2. Enhancing human potential through sporting creativity

Performance, product-oriented conceptualisations of creativity, which treat "creativity as an end (…) and/or a long-term objective" (Rasmussen, Østergaard Glăveanu, 2017, p.2) are the most frequent across existing literature. Correlates of sporting creativity, methods for its assessment and programmes for its development, also reflect this conceptualisation. Nonetheless, a new perspective is gaining momentum in the field of sporting creativity, inspired by the ideas of pragmatist philosophers like John Dewey or William James, and aligned with the works of authors closely associated with the second phase of the 'We-paradigm' in 'general creativity' (e.g. Glăveanu, Tanggaard, & Wegener, 2016). It refuses competitive obsessions and posits that creativity should be treated as a dynamic, transactional, context-adapted (and adaptable) process, rather than as a pre-conceived, static, end goal (Rasmussen, Østergaard Glăveanu, 2017). To highlight the importance of the 'player-social environment' relationship in creative development, Rasmussen and colleagues (2017) propose a framework where four different *creative positionings* are depicted:

- positive transformation: curious players find a supportive environment which helps them enhance their potential and try new things;
- positive reproduction: players who rarely take risks, focusing instead on fulfilling and replicating perceived expectations of coaches; their development may be limited, but it is possible that creative abilities improve over time;
- negative transformation: players whose enthusiasm and curiosity meets a narrow-minded, conforming environment, where risk-taking, if not functional, can be perceived as irreverence or disrespect, leading them to potential de-selection or disengagement;
- negative reproduction: players who find themselves in a highly controlling, hyper-normative environment, closed to change, which requires full adherence to existing norms and beliefs;

The relevance of the individual-environment interaction for creative development is also at the core of Vaughan and colleagues' (2019) work. Informed by dynamical systems theory, non-linear pedagogy, and ecological dynamics, they propose that creative development is considered as "a multifaceted wicked problem due to the countless interactions between people and environments that

constitute human development, athletic skill, and creative moments" (2019, p.1). In line with the suggestions of Rasmussen et al. (2017), this perspective suggests that concepts that within the 'I-paradigm' were considered intra-individual characteristics - like skill or creativity -, emerge instead from the system that the player and her/his environment are part of. These, in turn are moulded by ever-changing sociocultural constraints. Contextual awareness is therefore key for understanding creativity, but such a broad scope is hard to capture using the approaches traditionally employed in sporting creativity research. Therefore, Vaughan and colleagues (2019) argue that transdisciplinarity may prove a useful alternative towards a better understanding of the complexity inherent to creative development, "because it foregrounds the need for a reciprocal top down, bottom up dialectic between academics, practitioners and athletes**"** (2019, p.12).

3.5. Summary

In this chapter, I have presented and discussed existing literature on sporting creativity using, once again, Glăveanu's (2010a) 'He-I-We' paradigm as an organising framework. Although advances in cognitive psychology have contributed to the increasing dismissal of the 'lone genius myth', the sporting arena is still fertile in mythology. Instances of player deification or the use of bellicose analogies, i.e. sporting matches as battles, players as warriors, are common. Nonetheless, in the academic literature, the figure of the sporting genius is nowadays less identified with divine inspiration and more associated with the extraordinary development of expertise and pattern recognition. Together with attention, these traits and skills are among the most investigated in the field of sporting creativity, likely as a result of the evident influence of cognitive traditions in much of the research conducted so far. Positivist-inspired definitions and evaluations of creativity have privileged thought processes over the ability to act, limiting the understanding of *doing* (operationalisation) as an integral feature of sporting creativity. Notwithstanding, the need for real-time expression, and a reliance on the brain's implicit system suggest that sporting creativity should be conceptualised as 'in sport' instead of 'about' sport.

The existing literature indicates as well that sporting creativity can be trained. It does not, however, support a single strategy for its development. So far, a balance between deliberate practice and deliberate play appears likely to be advantageous. Social priming may also be a promising avenue for future research

to further our understanding of how creativity is developed. Some programmes for the enhancement of sporting creativity have been recently proposed (e.g., CDF, TCSP) and, although limited, the available evidence does support their effectiveness. However, which of the many features of these programmes is responsible for creative development and why remains unclear.

Most of the research conducted hitherto has employed quantitative and experimental or quasi-experimental designs in controlled, decontextualised settings, which ignore the situated nature of creativity, limiting its understanding. These approaches are valuable, however, additional insight into and appreciation of the complexity of creativity could be gained from complementing it with the employment of a higher diversity of methods (e.g. *in situ* observations, interviews, ethnography) and approaches. In the future, it is important that researchers are clearer about their worldviews and conceptualisations of creativity, describing as well the social-cultural context in which the action takes place.

In line with recent advances of socio-cultural psychology, an increasing number of researchers on sporting creativity appear to be adhering to the 'We-Paradigm'. For example, authors like Rasmussen, Østergaard, and Glăveanu (2017) or Vaughan and colleagues (2019) have criticised perspectives of sporting creativity that treat it as an end-goal and over-emphasise competition. Instead, they propose that sporting creativity should be seen as a situated, transactional and dynamic process, not exclusive to sport stars or attacking players but accessible to everyone at all levels, i.e. a 'developmental resource' (Rasmussen et al., 2017). In a similar vein, Vaughan and peers (2019) have described creativity as a *wicked* challenge, affected by socio-cultural constraints at multiple levels, which could therefore benefit from being investigated with a transdisciplinary approach. Moreover, Martin and Cox's (2016) LPA of basketball star Steve Nash hints that more holistic, integrative approaches to research on sporting creativity may prove fruitful in enhancing our understanding of the topic. Indeed, the difficulties inherent to tackling such a complex, multi-faceted construct have led to a growing acceptance that academics, coaches, and athletes would benefit from working together across different phases of the research process. Such collaborative efforts could lead to more diverse and inclusive studies and to more impactful contributions to the advancement of the field.

3.6. Moving forward: research aims

In chapter 1, I identified a perceived decline in creative expression and development in contemporary association football reported by high-profile practitioners – i.e. professional coaches and players – and researchers (e.g. Santos et al., 2016). Chapters 2 and 3 offered a comprehensive overview of what is known with regards to creativity, not only in general but also in sport. Despite moving at different paces, given that research on general creativity started much earlier than its sporting counterpart, both fields seem to be heading into a 'We-paradigm', that recognises creativity as a socio-cultural phenomenon (Glăveanu et al., 2019). Additionally, it has been suggested that transdisciplinarity can be an effective approach to research such a complex, multi-faceted construct like creativity (Montuori, 2019), including in sport (Vaughan et al., 2019). In this thesis, I will follow that suggestion for two reasons: (1) despite valuable, most work conducted to date on creativity in sport has adopted a logical positivist paradigm (Fardilha & Allen, 2019), which means that there is still a dearth of research regarding socio-cultural factors that may impact on creative development in sport; (2) transdisciplinarity proposes the adoption of an inclusive, inquiry-led approach to research, based on 'real-world' problems, that promotes not only the integration of knowledge from various disciplines, but also aims to bring together the voices of scholars and practitioners. This is important, given that relevant stakeholders like coaches, scouts, and players have hitherto only marginally contributed to what we know regarding sporting creativity. Thus, the present thesis aims to better understand the perceived decline in creative expression and development in contemporary association football, with a focus on professional football academies. To fulfil that aim, I will:

1. Examine academic and practitioners' conceptualisations of creativity and their suggestions for its development;

2. Employ a transdisciplinary approach to investigate the opportunities and challenges for developing creativity in professional football academies across multiple levels (e.g. individual, organisational);

3. Extend our knowledge regarding the development of creativity at the highest level of performance in professional football academy, i.e. among eminent, 'super-elite' players (Rees et al., 2016).

Chapter Four: Setting the scene - contemporary football and the ‘world’ of professional youth academies

4.1. Introduction

In this chapter, I will describe and discuss the role of youth football academies as singular places of apprenticeship and core parts of the talent development environment that may benefit from a focused approach by researchers. Additionally, I will provide a brief overview of the existing literature on talent identification and development, including the presentation and discussion of the most significant models of such processes in current literature. Although my research is not located in the talent identification and development body of research, providing such an overview is important due to the existing links between talent and creativity. For example, some talent identification models describe creativity as a component of talent. Moreover, both areas present similar challenges for researchers, like a lack of consensus in conceptualisation and assessment. Finally, I will link the evolution of youth academies to the evolution of football itself, explaining how the growing professionalisation, social closure, and hyper-masculine culture of the sport have contributed to the shaping of these organisations and related stakeholders. This will set the scene for a better understanding of how creativity may be promoted or hindered in such environments.

4.2. Association football: a game that became an industry

"The history of football is a sad voyage from beauty to duty"

(Galeano, 1998, p.2)

Despite suggestions that similar games were already being played centuries earlier (Szymanski, 2006), it was only in 1863 that organised football started to develop, with the creation in England of a uniform set of regulations and an organisation to oversee them – the Football Association (Clayton, 2015). The codification of football accompanied the process of industrialisation of Great Britain, and attempted to mitigate the frequent episodes of violence associated with the precursors of modern association football – folk and school football (Vamplew, 2006). It aimed, as well, to instil discipline and a new moral order promoted by Victorian middle classes, which could respond to the demands of factory work: "a game on defined pitches with prescribed time limits and hence suitable for an urban industrialised environment" (Vamplew, 2006, p. 434). Association football quickly expanded across the social spectrum, not only due to the generalised adoption of the Saturday half-day leisure block (Vamplew, 2006)

but also because of the “close-knit pattern of collective life” (Holt, 1986, p.7) in working class neighbourhoods, where football became part of the rites of male socialisation and fostered a sense of local identity (Holt, 1986). Szymanski (2006) suggests that the ingenious spirit of Charles Alcock, the first Secretary of the FA, contributed to the popularisation of association football. The creation of the FA Cup - a competition in which all member clubs could take part – and the organisation of the first international match, between Scotland and England, resulted in “spectator interest, which led inevitably to charging for admission and hence to the payment of players and professionalisation” (Szymanski, 2006, p. 459).

The military, political, and commercial influence of the British Empire were also instrumental for the dissemination of football across the World (Sugden & Tomlinson, 1998). Since the creation in 1904 of its international governing body, the *Fédération Internationale de Football Association* (FIFA), football has grown exponentially, and FIFA has presently more affiliated members (211) than the United Nations (193): “the sport has therefore become an important component of our social, cultural, political and economic life” (Hughson, Moore, Spaaij, & Maguire, 2016, p. i). Another sign of the importance that football gained in society is that the original code of laws, crafted in 1863, was exhibited in 2013 at the British Library, next to the *Magna Carta* and to the first edition of Shakespeare’s works (Clayton, 2015).

During the 20th century, with the decrease of British influence across the world and the advent of post-colonialism, football was reshaped in accordance to the local values, traditions, and aesthetic preferences of countries that embraced it (Elsey, 2017). National teams became symbols of national identity and differences were evident on the field of play, between the joyful style of the Brazilian ‘samba’ and the grey, methodical style of the English ‘kick and rush’ (Horak, 2017). Although not as clearly, the association between national or regional identity traits and styles of play is still visible nowadays in some clubs, e.g. FC Barcelona’s positional game as an expression of Catalonia’s collectivist values (O’Brien, Ginesta, & Juncà, 2020).

Deindustrialisation and the rise of ‘white-collar’ work contributed to football’s ‘*bourgeoisification’* in the 1970s and 1980s, and in the 1990s an increasing trend of commercialisation became evident, with the introduction of

television subscription fees (Giulianotti, 2012) as a result of profitable media rights' deals. For example, the English Premier League sold its 2019-2022 broadcasting rights to British and foreign operators for a total sum of 9.2 billion pounds (Associated Press, 2019). Morrow and Howieson (2014) explain that "many professional football clubs are now complex businesses, intrinsically concerned with financial matters" (p.515). Furthermore, football has embraced the trend of globalisation, with foreign ownership of clubs being increasingly common in countries like England (Howieson & Morow, 2014), and the voices of local supporters losing expression (Giulianotti, 2012) as a result of strategies of internationalisation. Very recently, the board of Sport Lisboa e Benfica, a Portuguese 115 year-old club, made a controversial proposal for the change of its historical badge. Its Chief Executive Officer justified that:

> "Benfica's badge is fine for me, but not for people in China. People say that the word Benfica is not on the badge. And there are six colours on the badge. If you notice the badges of Manchester United, City, or other clubs, there are fewer colours. There are commercial conditions to think about a new badge." (Soares de Oliveira, as cited in Rádio Renascença, 2019)

Players are the central actors of the game of football, and there are records of full-time professionals in England dating from the mid-1880s (Szymanski, 2010). However, Szymanski (2010) explains that although the game grew throughout the 20th century, there were mechanisms imposed by leagues that prevented footballers from earning what were deemed excessive sums: "by 1960 the maximum wage was £20 per week, less than any respectable profession would pay" (2010, p.32). The wage ceiling was lifted in 1961, but the most dramatic change in terms of player contractual power came in 1995 with the so-called Bosman ruling by the European Court of Justice (Morrow & Howieson, 2014; Szymanski 2010). The ruling, named after Belgian player Jean-Marc Bosman, meant that players got the right to move to a different club at the end of their contracts without their old clubs having to receive a financial compensation. Additionally, players became entitled to negotiate a pre-contract with another club within the final six months of their existing contracts without their current employers having to be paid any fee.

Clubs were inevitably faced with rising salaries, and the wealthier were able to recruit more experienced players from foreign leagues, which led to a decrease

in opportunities for ‘home-grown’ talent in the biggest leagues (Riedl & Cachay, 2002). However, in countries with less financial capacity, the Bosman ruling “has spurred talent development (…). This, in turn, has had a positive impact on their junior and senior national teams’ performance” (Norbäck, Olsson & Person, 2018, p.1). Between 2015 and 2018, for example, Portuguese club Benfica made £230m from the sales of academy graduates (Clapham, 2018). In the summer of 2019, they added £112.9 million to that tally, with the transfer of a single player – João Félix – to Spanish neighbours Atlético Madrid. In an attempt to overturn the lack of ‘home grown’ talent, the English Premier League has launched in 2011 a programme to support the development of youth academies, the ‘Elite Player Performance Plan’ (Premier League, 2011).

Between 2014 and 2019 the Premier League and its member clubs invested more than £800m in improving infra-structures, the provision of staff (full-time coaches increased from 250 in 2012 to 800 in 2019), coaching methods (with programmes like ECAS and EHOC) and supporting education (Ernst & Young, 2019). Although there is still a very high percentage of foreign players in the Premier League – 65.2% in 2019/20 (Transfermarkt, 2021a) – the first signs of success of the English investment have appeared in 2017, with the country winning the under-19 European Championship and the under-17 and under-20 World Cups. Furthermore, some players who have graduated from the EPPP have arrived at the first teams of top clubs, e.g. Jadon Sancho currently at Borussia Dortmund (Germany), Phil Foden at Manchester City, and Callum Hudson-Odoi at Chelsea. In summary, while ethical concerns may arise from the intense commodification of professional football (Giulianotti, 2012) and its actors, e.g. players, coaches, talent identification and development is becoming increasingly important for the financial success and survival of football clubs (Sarmento, Anguera, Pereira & Araújo, 2018).

4.3. Talent: what is it? Where does it come from?

‘Talent’ is currently an omnipresent word: while football clubs and countries look for talented athletes, companies look for talented employees or ‘collaborators’. In many cases, recruiters have become ‘talent acquisition managers’ (Redlich & Lattemann, 2019). However, despite its apparent popularity, Sarmento and colleagues (2018) highlight that - just like with creativity – to date there is no consensual definition of talent. Indeed, there are many similarities

between research on creativity and talent, which may be due to creativity being considered a component of talent (see Williams & Reilly, 2000, for example).

Baker and colleagues (2017) explain that although many resources have been allocated to research on talent identification and development (TID) in the last 30 years, with an emphasis on its physical aspects, "our ability to accurately identify talent seems surprisingly low for the amount of money, time and effort invested". (2017, p.3). Furthermore, and once again similarly to creativity, most research on TID has been conducted in mono-disciplinary isolation, and limited to small samples from single countries who belong to what Henrich, Hein, and Norenzayan (2010) called 'WEIRD' societies: Western, Educated, Industrialized, Rich, and Democratic (Schorer, Wattie, Cobley, & Baker, 2017).

Similarly to other areas of academia and society in general, the positioning of talent in the nature-nurture continuum has sparked enthusiastic discussions. On the one hand, Bloom's (1985) seminal work on talent development highlights the importance of family, peers, and coaching support on the successful development of elite athletes. On the other, Simonton (2017) draws from recent findings from behavioural genetics to contend that "the vast majority of variables on which people can vary feature impressive heritability coefficients. Those notable heritabilities hold for physical and cognitive abilities as well as personality traits, interests, and values" (2017, p.13). Moreover, Baker and colleagues (2017) support the thesis that abilities like intelligence and coordination may be innate and hard to change.

Gagné (2013) prefers to label "untrained and spontaneously expressed outstanding natural abilities or aptitudes" as gifts, defining talent as "the outstanding mastery of systematically developed competencies (knowledge and skills) in at least one field of human activity" (p.5) which positions an individual in the upper 10% of her/his 'learning peers'. In turn, Aggerholm (2015) proposes a useful distinction between 'having a talent' and 'being a talent'. While the former refers to "natural aptitude, disposition or skill that athletes can possess, display and develop" (p. 27) , the latter relates to:

> "the futural modality of existence as it describes a relation between present and future and is to a large extent defined by this temporal structure. Here the potential of talent is not a cause or effect, but a future potential." (Aggerholm, 2015, p.30)

No matter where researchers put an emphasis on their work – if more on the nature or nurture sides of the spectrum -, there appears to be nowadays an overall consensus that talent identification and development requires multidimensional approaches that account for the complexity of the interactions between physical, technical, psychological and contextual/socio-cultural factors that allow for successful performances to emerge (Weissensteiner, 2017; Simonton, 2017; Schorer et al., 2017). Furthermore, such approaches may prove instrumental in mitigating issues of overly-simplistic selection (e.g. relative-age effect) that still prevail in the field (Weissensteiner, 2017; Sarmento et al., 2018).

4.4. Modelling the talent development process

Over the past four decades, a myriad of models of the talent development process have been proposed, e.g. Gagné's Differentiating Model of Giftedness and Talent (DMGT, 1985) and its more recent version, the Expanded Model of Talent Development (EMTD, 2013), Côté and colleagues' Developmental Model of Sports Participation (DMSP, Côté, 1999; Erickson, Côté & Fraser-Thomas, 2007; Côté & Hay, 2002), Long-Term Athlete Development (LTAD, Athletics Canada, 2015).

Gagné's DMGT (1985) illustrated the process of progressive development of natural abilities (gifts) - individual differences that appear spontaneously during the child's early years "without the structured learning and training activities typical of the talent development process" (Gagné, 2013, p.13) - into talents. In this model, the environment (i.e. family, role models, school), together with the individual's personality and motivation, act as 'catalysts' in that transformative journey. The DMGT has been updated three times since its inception (2005, 2009, 2013), with creativity being included in all versions as a mental gift, in line with the 'I-paradigm' conceptualisations of creativity as individual and intra-psychic. Gagné's most recent proposal, the EMTD, aims to account for developments in the field of genetics, and includes a first stage termed 'biological basements' (2013). The basements (phenotypes) undergo developmental processes (e.g. maturation, informal learning) affected by catalysts (related to the milieu and to intrapersonal characteristics of the individual) to become natural abilities. These, in turn, undergo another developmental process (described as 'activities, investment, and progress'), again affected by environmental and personal catalysts (where provisions are now included along with the milieu and individual), which

allow the person to develop high-level competencies which Gagné (2013) calls ‘talents’, as long as they place the performer in the top 10% of her/his peers.

Albeit still considering creativity as an intra-psychic trait, Gagné’s EMTD provides a balanced account of the myriad intersections between natural abilities and training - that he describes as “a choreography unique to each individual” (2013, p.16). Such perspective represents a useful illustration of the complexity of human – and athletic – development. Moreover, Gagné’s efforts to continually update the model based on evolving scientific findings, enhance the credibility of his work, despite the arbitrariness inherent to the fixation of a 10% value to distinguish between talented and non-(or not yet) talented individuals.

The DMSP (Côté & Fraser-Thomas, 2007) proposes three distinct pathways for athlete development: two through sampling (recreational participation and elite performance) and one through early specialisation (elite performance). The sampling pathways have the same foundation during the early years (6 to 12), focusing on deliberate play and enjoyment. Then, around 13 years, the recreational trajectory proposes the continuation of sampling activities, while the elite performance pathway proposes an increasing specialisation in two stages – the specialising years (which constitute a blend of deliberate play and deliberate practice activities) between 13 and 15, and the investment years from the age of 16, when there is a focus on deliberate practice. With regards to the trajectory of elite performance via early specialisation, it involves high amounts of deliberate practice from the early years, with little sampling. Côté, Strachan, and Fraser-Thomas (2008) alert that athletes that follow the early specialisation path may “experience some negative physical and psychosocial outcomes during this period [such as] overuse injuries, reduced sport enjoyment” (p.36) and early drop-out.

Since its creation, the DMSP has been widely adopted, across different continents (Bridge & Toms, 2013). Its popularity may be due to several reasons, such as the recognition of the importance of psychosocial aspects for long-term athlete performance and personal development, or its systematic development, which allows for testing of the assumptions that led to the theoretical framework (Baker & Côté, 2006). However, the DMSP has limited robustness, due to its reliance on retrospective data (Bridge & Toms, 2013). Furthermore, the association between diversification and enjoyment or a lack of pressure to perform may be described as too simplistic, and applies only to late specialisation

sports (excluding, for example, gymnastics or figure skating). Thus, alternative pathways could be considered, such as 'early engagement', which implies "participation in relatively high amounts of play activity in the primary sport, rather than through relatively high amounts of play activity in multiple sports" (Ford et al., 2012, p.1654). In this pathway, the amount of structured practice and involvement of the child in competition events is usually low. In a study involving seven different countries across three continents (Europe, Africa, and South America), Ford and colleagues (2012) found support for the early engagement pathway with regards to the successful development of elite football players at the age of 16.

The LTAD model was developed by Istvan Balyi and colleagues (Balyi, 2001; Balyi & Way, 1995; Balyi & Hamilton, 1996; 2003) and aimed at promoting both lifelong involvement in sport and elite performance (Balyi, 2001). The framework was originally composed by five different stages, mostly directed at late specialisation sports. The goal was to maximise the "the development of general, fundamental motor and technical-tactical skills" (Balyi, 2001, p.2). The first stage of the LTAD model – FUNdamentals (males and females, 6-10 years old) – focuses on the correct execution of fundamental movements and on improving agility, balance, coordination and speed. Games and enjoyment are at the heart of this stage, and participation in a wide range of sports is recommended for 5 to 6 times a week.

The second stage – Training to Train (males – 10 to 14 years; females – 10 to 13 years; sport-specific training 4 times/week plus participation in other sports) – addresses the basic physical tactical and technical skills of the young athlete's favourite sport, while introducing what Balyi (2001) calls 'ancillary capacities' like warm-ups and cool-downs, nutrition or tapering. While at this stage players already take part in competitive matches (which should occupy 25% of their time), their focus should be on the developmental process rather than on the outcome. Balyi considers this stage as key to future achievements of elite performers, as it refers to "critical or sensitive periods of athlete development: athletes who miss this stage of training will never reach their full potential, regardless of remedial program they may participate in" (Balyi, 2001, p.3).

The third stage – Training to Compete (males – 14 to 18 years; females: 13 to 17 years; sport-specific training 6-9 times/week) – is characterised by

significant changes in the training-competition ratio, which becomes 50:50. Training becomes much more individualised and sport-specific, tailored to the strengths and weaknesses of each athlete, to boost, as much as possible, competitive performance.

The fourth stage – Training to Win (males 18 years and older; females 17 years and older; sport-specific training 9-12 times/week) – represents the end of the athlete's developmental journey. The training-competition ratio becomes 25:75, with high intensity and high volume training, and there is a focus on achieving good results in major competitions. Finally, the fifth stage – Retirement/Retraining – alludes to the post-athletic career, and to a professional transition into sport-related careers, like coaching or officiating.

Together with the Canadian Sport Centres LTAD Expert Group, Athletics Canada (2015) has further developed the original LTAD model, adding two new stages and reviewing the recommended contents and ages for each phase: Active Start (0-6 years, focus on fun and making physical activity a routine), FUNdamental (boys 6-9, girls 6-8, addressing agility, balance, coordination, and speed, while continuing to promote daily physical activity), Learning to Train (boys 9-12, girls 8-11, introducing physical literacy, enhancing previously learned skills in a more structured environment, where mental and emotional components are introduced), Training to Train (boys 12-16, girls 11-15, aiming to build endurance, strength and speed, while beginning to develop sport-specific skills), Training to Compete (boys 16+, girls 15+, increasing specialisation and furthering physical and psychological preparation and support), Learning to Win (men and women 20+, focusing on 'competing when it counts', maximising training to improve results), and Active for Life (at the end of the athletes' competitive careers, where an adjustment to a different lifestyle is required). Both versions of the LTAD model are testament to an increasing concern from national governing bodies (NGBs) and other sporting organisations regarding the promotion of a progressive, sustained development of potential elite performers. Having a LTAD programme in place has even become a governmental requirement in many countries for NGBs to receive state funding (Lang & Light, 2010)

However, there are some downsides to this framework, like the potential for over-training. Balyi's (2001) conceptualisation is largely inspired by what he termed the '10,000-hour rule'. This common misinterpretation of Ericsson et al.'s

(1993) seminal work on deliberate practice still leads researchers and practitioners to over-emphasise the quantity of training over its quality/focused nature. Additionally, the LTAD may reflect an idealised path of sporting development, which fails to recognise the uniqueness of each individual. Its rigidness and linearity may lead organisations to "'writing off' young athletes who, for various reasons, do not/cannot commit to recommended training loads or who enter the sport late" (Lang & Light, 2010, p.391). While the LTAD and the other two models above presented are among the most cited in the TID literature, the existing body of research is much wider, and thus cannot be entirely covered in this thesis. In line with the aims and objectives of the present work (see section 3.6), I will subsequently focus on football, and particularly on academies as talent development environments.

4.5. Talent development in football

In the past 30 years, there has been an increasing interest on talent identification and development in association football (Christensen et al., 2009; Williams & Reilly, 2000), which is related to the growing economic importance of the sport. Sarmento and colleagues (2018) explain that "the ability to identify and nurture talented players at an early age may ensure sporting and financial success and/or survival" of clubs and federations (p.908). The frequent difficulties experienced by young players labelled as 'talented' in their transition from youth to adult elite football mean that clubs may face potential liabilities. Therefore Relvas and colleagues (2010, p.167) posit that "it would appear necessary to reduce the risk of investing in youth training (i.e., financial and time-intensive investments)". It is thus unsurprising that some clubs may be tempted to prefer players in more advanced stages of physical maturity as opposed to those with potential (Larsen et al., 2013). Williams & Reilly (2000) explain that the early identification of so-called football potential allows for young players to receive specialised training that may accelerate their developmental process. Moreover, they add that "the reliable identification of future elite players permits clubs to focus their expenditure on developing a smaller number of players, representing a more effective management of their resources" (2000, p. 657). Notwithstanding, the difficulties associated with the conceptualisation of talent, due to its complex and multi-dimensional nature, extend to its identification (Christensen et al., 2009) and development.

The evaluation of player potential in football has traditionally been conducted by coaches in a subjective manner, influenced by their individual trajectories (Christensen et al., 2009), club philosophies and preferred styles of play (Sarmento et al., 2018). Indeed, Christensen and colleagues (2009) posit that "players are constructed by each coach as talented only in relation to a specific context in which the coach holds a dominant position as the person who has both the experience and the power to define the players as "talented" (p. 379). Clubs have resorted to acronyms such as TABS (Technique, Attitude, Balance, Speed) or SUPS (Speed, Understanding, Personality, Skill) to synthesise their preferences and beliefs with regards to what constitutes a 'talented' player (Williams & Reilly, 2000; Richardson, Gilbourne, & Littlewood, 2004). Nonetheless, with the increasing 'scientificism' in sport, associated with what Aggerholm (2015) termed 'instrumental rationality', there have been attempts to transform TID into a more objective process, which may be helpful to assist in the confirmation of practitioners' intuitions in terms of player recruitment (Williams & Reilly, 2000). However, to date no agreement has been achieved on the best scientific practices to identify and develop talent (Sarmento et al., 2018).

In 2000, Williams and Reilly constructed a model of potential predictors of football talent, which was divided in four key areas: physical (e.g. height, weight, body fat), physiological (e.g. aerobic capacity, anaerobic power and endurance), sociological (e.g. hours in practice, coach-child interaction, parental support) and psychological (e.g. perceptual-cognitive skills like attention and anticipation, and personality predictors like motivation and self-confidence). The authors include creative thinking as a predictor included in the psychological factors, embedded in the perceptual-cognitive skills section, and linked to intelligence, which resonates with Guilford's assumptions that gave origin to the model of the Structure of Intellect (1956; 1967).

A recent systematic review of the literature on TID in male football (Sarmento et al., 2018) confirmed that Williams and Reilly's (2000) model has been used as a compass for most research on TID in football conducted to date (Reeves, McRobert, Littlewood, & Roberts, 2018). The most investigated themes were: specificity and volume of practice; performers' constraints such as psychological factors (e.g. resilience, confidence, concentration, motivation), technical and tactical skills (especially technical ability); anthropometric and

physiological factors (e.g. muscular power, speed, agility); and environmental constraints, with a strong emphasis on relative age effect – which refers to the overall difference in age between individuals within each age group, that may lead to significant differences in performance and to a selection bias (Helsen, Van Winckel, & Williams, 2005). Goalkeepers, defenders, and strikers have been identified as the most affected by the RAE, with the tallest and heaviest young players being commonly preferred to occupy those positions (Williams & Reilly, 2000; Beckmann & Beckmann-Waldenmayer, 2019).

More recently, there has been an increasing interest on socio-cultural influences on talent (e.g. club organisational culture, family and school environments). For example, Reeves and colleagues (2018) conducted a scoping review of the potential sociological predictors of talent in youth elite football. They contended that these have been scarcely addressed by researchers, which can be justified with difficulties in gaining access to professional football clubs. Nonetheless, programmes like the Elite Player Performance Plan (EPPP), initiated by the English Premier League in 2011, have highlighted the importance of clubs paying more attention to environmental factors such as parental (e.g. how parents may create or help mitigating anxiety in young players, parental-club relationships) and academic (e.g. combining football training with academic studies) support , and coach-athlete interactions.

Therefore, it appears that just like the field of creativity, the study of talent development is also moving towards a 'We-paradigm', which recognises the situated, distributed, and relational nature of the construct. This is made clear by the increasing attention devoted to environmental aspects and socio-cultural constraints of the talent development process (Côté, Lidor, & Hackfort, 2009; Larsen, Alfermann & Christensen, 2012; Mills, Butt, Maynard & Harwood, 2014).

4.6. Talent development environments

The existence of adequate environments for talent development across an athlete's life-span is deemed instrumental for the success of the process (Bloom, 1985; Weissensteiner, 2017). This life-span includes not only the sportsperson's training or competitive career, but can go back to his/her early life. Indeed, Bloom and colleagues (1985) have demonstrated the impact of parental support and geographical location on the growth of top swimmers and tennis players. Such conditions referred, for example, to the existence of adequate training facilities,

parental interest for sport and their ability to provide their kids with tailored coaching and financial and logistical support at different stages of their lives, from early years to the professional, international stage. Martindale, Collins, and Abraham (2007) refer to the environment as "the most consistent and immediately controllable factor in the life of a developing elite" (p.188). It is therefore unsurprising that different models have been proposed in attempts to capture the complex nature of athlete/player development environments.

For example, in 2005, Martindale, Collins, and Daubney coined the model of effective talent development environments, and five years later, Henriksen, Stambulova and Roessler developed the Athlete Talent Development Environment (ATDE) framework (Henriksen et al, 2010). The work of Martindale and colleagues (2005) resulted from an analysis of the existing literature at the time and claimed the need for more systematic, holistic, and integrated conceptualisations of developmental processes. The model had four key areas: long-term aims and methods, wide-ranging coherent messages and support, emphasis on appropriate development instead of early success, and individualised, continuous development. This framework received further support from an empirical study conducted by Martindale, Collins, and Abraham in 2007, which proposed that the 2005 model should be extended to better address the importance of formal and informal interactions between athletes and coaches, as well as the benefits of individualised programs. Furthermore, the authors highlighted the importance of educating "a variety of people to ensure that every influence is coherent (…), such as parents, coaches, peer groups, other role models, teachers, schools, and society as a whole" (Martindale et al., 2007, p.194).

This perspective was largely aligned with that of Henriksen and colleagues (2010), who introduced an holistic, dynamic, and ecological approach to talent development. They proposed a move beyond the traditional athlete 'micro-environment' - coaches, peers, parents – to include, for example, socio-cultural constraints such as national culture and its associated values and beliefs or governmental policies in the 'talent equation'. Furthermore, the scholars suggested that the evolution of the environment across time should be considered too (Henriksen et al., 2010). In 2017, Henriksen and Stambulova identified eight features of successful ATDE micro-environments: the existence of supportive relationships within training groups, proximal role models, the support of the

athletes' sporting pursuits by the wider environment, incentives for the development of psychosocial skills, diversification of training, focus on long-term development, the existence of a robust and coherent organisational culture, and the coordination and integration of efforts from all stakeholders involved in the process. Since its creation, this holistic ecological approach has already been applied in multiple settings, across different sports, such as sailing (Henriksen et al., 2010), golf (Henriksen, Larsen & Christensen, 2014), and association football, with Larsen, Alfermann, Henriksen, and Christensen (2013) exploring the TD environment of the under-17 team of AGF, "one of the oldest and most successful Danish soccer clubs" (p.193).

4.7. Football academies as a core part of talent development environments

Industrialisation and urbanisation processes in most developed countries have led to the at least partial closure of what was often considered the most successful of 'football schools' - street football (Milby, 2006; Santos et al., 2016). As such, alternative spaces and pathways for player development, which simultaneously mirrored the increasing professionalisation of the game, had to be created. In the 1980s, the English Football Association (FA) took responsibility for a more structured approach to talent development and created 147 centres of excellence across the country, together with a national venue at the Lilleshall National Sports Centre (Holt, 2002). However, some clubs had independent player development pathways, which reflected disagreements with the national governing body. These disagreements became more evident after England's first-team failed to qualify for the 1994 World Cup (Holt, 2002).

After the creation of the Premier League in 1992, a thorough review of the youth system was overseen by Howard Wilkinson, which led to the development of the English Football Association's Charter for Excellence in 1997 and set the stage for the introduction of a regulated academy system at professional clubs for young players from the age of 9 (Richardson, Gilbourne & Littlewood, 2004). These talent development programmes implied that each academy recruited a combination of full and part-time coaches, and assured the provision of quality infra-structures, curricular and coach education, and even a person responsible for the well-being and welfare of young players (Richardson, Gilbourne & Littlewood, 2004). Successful continental case-studies of clubs like those of Auxerre in France and Ajax in Holland served as inspiration for the inception of

English academies (Holt, 2002). Other football federations across Europe have borrowed from the Charter for Excellence to create their own blueprints for player development – e.g. the 'Charte du Football Professionnel', created in France in 2007 (Relvas et al., 2010).

In June 2010, a modernisation of the English youth development setup was approved by representatives from the Premier League, the Football Association, and the Football League, with the ambition of "creating a world leading academy system" (Premier League, 2011, p.10), which allowed for higher efficiency of the youth development system based on six critical success factors: higher numbers and quality of so-called home grown players given professional contracts and playing regularly at first-team level; more time available for players to play and receive coaching; better coaching provision; the introduction of an effective system of measurement and quality assurance; the ability to influence strategic investment in the Academy system, generating significant value for money; and achieving significant gains in all areas of player development (Premier League, 2011).

Additionally, the Elite Player Performance Plan introduced a pathway that was explicitly inspired in the work of Côté (1999) and Bloom (1985) with regards to stages of athlete development: the foundation phase from under-5 to under-11; the youth development phase, from under-12 to under-16 and the professional development phase, from under-17 to under-21, just before players reached the senior professional game. The contents addressed in these phases respected, on the one hand, each club's philosophy and socio-cultural background, while on the other aligned with the Football Association's "approach to Long-Term Player Development, supported by a Four Corner Model (English Football Association, 2020) for development of players which considers the interface between technical/tactical, psychological, physical and social elements of the players' "environment".

With professional clubs taking responsibility for the development of so-called talented players in their academies, the traditional unified grassroots journey was divided in two. In its current Youth Manual, FIFA (n.d.) presents two developmental pyramids, with some intersection points, and sharing a common foundation from the age of 6 to 12, after which they split:

> “on one side we have elite youth football providing high-level training for young professionals and international players of tomorrow. (…) On the other side, football as a leisure activity, which is usually run by volunteers, gives opportunities to people of all ages to play football.” (FIFA, n.d., p.6)

Thus, it appears that football academies are particular environments, focused on the development of elite players and/or on the generation of significant revenues via the sale of players (Relvas et al., 2010). These spaces are usually associated with high pressure (Mills et al., 2014) and expectations, and low tolerance for failure (Reilly, Williams, & Richardson, 2008). Such characteristics of academies make them different from other pathways of player development - e.g. grassroots (FIFA, n.d.), which means they should be studied separately. However, it must be remembered that although they represent a core organisation in terms of equipping players who aspire to become professional to deal with different challenges and transitions, clubs and academies are just a part of a much wider, complex network of influences that shape the talent development process (Larsen et al., 2013).

Important differences have been identified between talent development environments in football and other sports. While in a study of a successful sailing ‘milieu’ Henriksen and colleagues (2010) identified the close proximity between accomplished elite athletes and aspiring ‘prospects’, research conducted in professional football across different European countries has shown a lack of communication and involvement between first-teams and academy set-ups (Relvas et al., 2010; Larsen et al., 2013; Mills et al., 2014). Such distancing may be motivated by a “perceived requirement to ‘protect’ the first team players and to stimulate/motivate the youth players to ‘fight’ to enter into a professional environment” (Larsen et al., 2013, p. 203), which reflects in part the socially closed and hyper-masculine nature of professional football, often perpetuated by the fast-tracking of former players into coaching (Blackett, Evans, & Piggott, 2017).

4.8. Professional football academies as identity disruptive, hyper-masculine spaces

Despite episodes of great wealth and social status being frequently displayed on traditional and social media by its biggest stars, for most players (and other stakeholders) the world of professional football is much less

glamorous. For example, Roderick and colleagues (Roderick, 2006; Roderick & Schumacher, 2017) have described problems of permanent job insecurity, ageism, inexistence of work-life balance, and lack of support after serious injuries, which result in players perceiving themselves as 'pieces of meat', 'commodities' (Roderick, 2006) or 'performing bodies' (Brown & Potrac, 2009), as well as experiencing difficulties in maintaining a stabilised sense of self and identity (Roderick, 2006; Roderick & Schumacher, 2017). This is because "when young football players are integrated into the club they are not only taught how to play football, but also taught the attitudes, values and norms of the club" (Christensen & Sørensen, 2009, p.120). Gaining respect and status in the closed world of football requires full commitment to the sport, often at the expense of (all) other activities, like school (Christensen, 2009): "nothing else has serious psychological existence for the young footballers" (Christensen & Sørensen, 2009, p.129).

The perceived ruthlessness of academy environments is well illustrated by Cushion and Jones (2006) who describe generalised perceptions within the football culture that "harsh, authoritarian, and often belligerent coaching behavior [are] viewed as a necessary aspect of preparing young players for the rigors of the game" (p.148). The unsentimental reality of academy football was further highlighted in a study conducted by Mills and colleagues (2014), where 65% of players interviewed "agreed to some extent that developing performers are often written off before they have had an opportunity to demonstrate their full potential" (2014, p.1464). Furthermore, the authors pointed that players perceived a lack of interest from academy staff in their lives beyond football, which leads them to question if such "environments might "sow the seed" for an athletic identity and potential identity-foreclosure for these adolescents" (Mills et al., 2014, p.1468).

In examining the responses of professional academy players upon being released at the end of their scholarship contracts, Brown and Potrac (2009) found that strong athletic identity was likely responsible for the "feelings of loss, uncertainty, failure and disorientation that followed their deselection" (2009, p.154). Nonetheless, the players' dreams of reaching professional status and the very limited number of places available at the top level of the game, promote a culture of 'disindividualisation', and obedience to a "gendered, autocratic, and hierarchical discourse [that] reflects the notion of hegemonic masculinity within

soccer and is both the outward manifestation of the culture and its primary survival mechanism" (Cushion & Jones, 2006, p.151).

4.9. Reflecting on talent and creativity research: similarities and differences

Although they exist as separate bodies of research, several parallels can be drawn between talent and creativity. Firstly, the two have been described as multidimensional constructs which are hard to define precisely. 'Nature-nurture' debates regarding the origins of creativity and talent have also marked the evolution of both concepts. Secondly, to date no consensuses have been reached with regards to the best practices for assessing and/or developing them. This means that the 'subjective' opinions of experts are still very important to decide who is 'creative' and/or 'talented'. Thirdly, there is a clear overlap regarding strategies proposed by researchers to develop talent and creativity – e.g. deliberate play, deliberate practice, and non-linear pedagogy.

There are also similarities between the models of talent and creative development. For example, the LTAD (talent) and the CDF (creativity) are both longitudinal, multi-stage frameworks which prioritise fundamental movement skills during early years. Similarly, the DMSP concurs with proposals from researchers like Memmert (Memmert et al., 2010) and Bowers (Bowers et al., 2014) on the importance of sampling and combining different strategies – e.g. deliberate practice and play – to enable sporting talent and creativity. Researchers from both fields have also recognised the importance of cultivating appropriate environments (sporting and beyond) for the fulfilment of talent and creative potential. With regards to the developmental journeys of highly successful sporting performers Bloom and colleagues (1985) investigated world-class swimmers and tennis players, while Martin and Cox (2016) conducted a life-positioning analysis of basketball legend Steve Nash. More recently, Vaughan and colleagues (2019) departed from Henriksen and colleagues' (2010) ATDE model to suggest that sporting creativity could be better understood through a transdisciplinary lens. In line with the assumptions of the 'We-paradigm', they contend that "creative moments, skill and more generally talent in sport, are not traits possessed by individuals alone, but rather can be conceived as properties of the athlete-environment system shaped by changing constraints" (Vaughan et al., 2019, p.1).

The many similarities between talent and creativity – and how they have been researched – suggest that both fields could benefit from more intense communication and debate. However, it should be recognised that talent is usually treated as broader than creativity, encompassing, for example, physical characteristics, like speed or strength. The concept of continuum introduced by Brown and Gaynor (1967) to justify the increased importance of creativity in more complex sports does not apply to common conceptualisations of talent, i.e. a sprinter like serial winner Usain Bolt can be considered talented without being described as creative. Furthermore, although Vaughan and colleagues (2019) have explained that talent and creativity both depend on athlete-environment systems, talent is commonly used to designate a person - 'a talented runner'. 'a talented writer' -, while creativity has a wider application that goes beyond the individual, e.g. creative writing, creative industries. Similarly to earlier discussions on the different conceptualisations of creativity, it appears unlikely that a consensual definition of talent will ever be reached.

Consequently, acknowledging the situated, distributed and relational nature of both talent and creativity may be the starting point for more targeted and productive dialogues between researchers, practitioners and other stakeholders. Doing so implies the recognition that there may be important differences between studying, for example, talent or creativity development in football within participation-oriented, grassroots settings or performance-oriented, professional academy settings, as it is likely that values, goals, and stakeholders involved may vary between these environments. That is why I have thus decided to focus exclusively on professional football academies for the purpose of this thesis. Furthermore, although there may be many similarities between creativity and talent, as explained above, both constructs are highly complex and deserve therefore specific attention.

I have chosen to study creativity rather than talent for two reasons: firstly, there is a perception that creativity is a pressing, 'real-world issue', with practitioners claiming a decline in creativity in association football (see section 1.1 in chapter 1); the second is that although creativity has been identified as an important factor for success in football (Kempe & Memmert, 2018), there is still limited research on the topic when compared to talent identification and

development, especially with regards to the so-called ‘We-paradigm’ (Glăveanu, 2010a).

4.10. Summary

Albeit having started as an amateur game in the 19th century, association football has developed into a multi-billion industry inevitably shaped by wider socio-cultural, political, and economic influences. The advent of pay-per-view television and globalisation has intensified football’s commercialisation, with players, coaches, and other stakeholders being considered as marketable commodities. In this scenario, professional youth academies have received significant investments, to assist in their mission of not only developing so-called talented players that can not only resource the clubs’ first-teams, but also produce financial gains that may be instrumental for the survival of these institutions. However, just like with creativity a consensus on what talent is and how it can be identified and developed is yet to be reached. Indeed, there are several similarities between both concepts, including on how they have been researched to date.

Over the past four decades, several different models of the talent identification and development process have been produced, with most reflecting a positivist orientation that separates between physical, technical/tactical, and psychological traits and skills. More recently, increasing attention has been given to the potential influence of socio-cultural factors on the successful development of prospective elite athletes. Such interest has also resulted in the construction of alternative theoretical frameworks, like Henriksen et al.’s (2010) ATDE, which call for more holistic and ecological approaches to talent development. Such calls extend to sporting creativity, which was made clear by Vaughan and colleagues (2019) explicit support for the ATDE as a useful model to conceptualise its development.

4.11. Rationale for thesis research

Creativity has been described as the ‘fountainhead of our civilizations and a defining characteristic of what makes us human’ (Dietrich & Haider, 2017, p. 1). Indeed, since J.P. Guilford’s 1950 address at the American Psychological society, the topic has deserved increasing attention. Sport is no exception to such interest, and the last decades have been the most productive ever with regards to academic research on sporting creativity (Memmert, 2010). However, the majority of scholarly literature published to date focused on performance-oriented, positivist-

inspired conceptualisations of the construct, aimed at identifying and developing individual traits and skills associated with creative thinking, through studies conducted in controlled settings, e.g. laboratories (Fardilha & Allen, 2019). Such research approaches fail to account for the situated, distributed, and relational nature of creativity highlighted by socio-cultural psychologists (Glăveanu, Tanggaard & Wegener, 2016; Lebuda & Glăveanu, 2019) aligned with Glăveanu‘s (2010a) so-called ‘We-paradigm’. Notwithstanding, in the last five years an increasing number of researchers on sporting creativity have started to recognise that creative development is affected by personal biographies (Rasmussen, Glăveanu & Østergaard, 2019) and other socio-cultural constraints - see, for example, Vaughan and colleagues’ (2019) adaptation of Henriksen et al.’s (2010) ATDE model) - which may impact its conceptualisation and development. This is in line with Sternberg’s suggestion that creativity should always be evaluated ‘locally’.

In football, creativity is considered a key factor for successful performances (Kempe & Memmert, 2018). However, numerous high-profile coaches and players (see chapter 1) have reported that within professional football there are nowadays important challenges to creative expression, such as the prioritisation of physical qualities over decision-making and technical skill. To increase the complexity of this issue, Santos and colleagues (2016) have added that “the lack of street sport, unadjusted training, mechanization of play, decrease of the game enjoyment and a narrow game knowledge” (p.1) pose as well important obstacles to creative development. Although during the last two decades different strategies (e.g. deliberate practice, deliberate play) and programmes (e.g. TCSP, CDF) have been proposed to improve creativity in sport (Fardilha & Allen, 2019), existing research is yet to capture the technical and socio-cultural idiosyncrasies associated with creative development in association football, especially when considering the important differences between participation (‘grassroots’) and performance-oriented (‘professional academies’) settings (FIFA, n.d.).

Indeed, the increasing commercialisation of football and professionalisation of clubs means that these have become complex businesses (Morrow & Howieson, 2014). The development of future professional players is nowadays an important source of financial sustainability for clubs (Sarmento et al., 2018), and significant investments have been made in recent years for the modernisation of

academies (Relvas et al., 2010). Despite its popularity, football is still recognised as a deep-rooted gendered, authoritarian culture, with professional academies being characterised as spaces where blind obedience is expected and rewarded and traditional education often devalued (Cushion & Jones, 2006; Christensen & Sørensen, 2009). Such complex, historical, cultural and organisational idiosyncrasies of the so-called 'beautiful game' and its professional developmental structures may influence opportunities and challenges for creative development. Thus, in line with Sternberg's (2019) suggestion of the importance of 'local' evaluations of creativity, it is important that these particular environments can be studied in more detail.

Departing from the overall aim of this thesis, i.e. to investigate the perceived decline in creative expression and development in contemporary association football, in chapters 6 and beyond I will expand our current understanding of creativity in football, and in particular in professional academy settings. I will do so by presenting three original studies that explore the phenomenon through an integrative transdisciplinary (Montuori, 2019) lens, aligned with Glăveanu's (2010a) 'We-Paradigm' and Vaughan and colleagues' (2019) suggestion that transdisciplinary approaches are suitable for capturing and addressing the complexity of sporting environments, characterised by numerous "interactions that are shaped by, and subject to, a continually changing dynamic of constraints [that] transcend disciplinary boundaries, [and[act over varied timescales" (2019, p.12). In that vein, the next chapter is devoted to an in-depth explanation of transdisciplinarity, its philosphical foundations and its potential for improving our current understanding of sporting creativity.

Chapter Five: The potential of integrative transdisciplinarity for creativity in sport

In this chapter, I will present and discuss integrative transdisciplinarity as a potentially valuable approach for gaining a better understanding of creativity in sport. I will then reflect on its appropriateness for my inquiry and why it may provide a useful alternative to traditional reductionist or purely holistic world-views. Its assumptions, ontological, and epistemological foundations will be described, together with my positioning as an inquirer in continuous interaction with the inquiry.

5.1. Introduction

In an uncertain, pluralistic world (Montuori, 2019), the challenges of complexity are increasingly more evident and at very different levels. While some of those challenges may be common to the whole planetary population, like climate change, others may be more focused, such as the obesity epidemic in so-called developed countries. Although traditional reductionist approaches to problem-solving may have been extremely successful in the past in advancing areas like medicine, they are no longer able, *per se*, to deal with such rising complexity (Streufert, 1997; Van Regenmortel, 2004; Zeitoun et al, 2016). Therefore, the need for more ecological approaches to tackle 21st-century problems is being recognised worldwide (e.g. King, Stokols, Talen, Brassington & Killingsworth, 2002; Maldonato & Pietrobon, 2009) in several domains – e.g. health (Kloos & Zein, 2019), engineering (Nicolescu & Ertas, 2013), education (Senge, 2010).

Calls for more multidisciplinary (e.g. Bellentani, Dalle Grave, Suppini & Marchesini, 2008; Impe, 2000; Ko & Chaudhry, 2002), interdisciplinary (e.g. Amato et al, 2017; Bimstein & Miskovich, 2018) and transdisciplinary (e.g. Maass & Equihua, 2015; Tetteh & Lengel, 2017; Montuori, 2019) research and skills are also becoming increasingly common, and sport is no exception (e.g. Buekers et al, 2016; Piggott, Müller, Chivers, Papaluca, & Hoyne, 2017; Schary & Cardinal, 2015; Toohey et al., 2018; Vaughan et al, 2019). In the next sections, I will distinguish between these approaches, before focusing on transdisciplinarity. Firstly, I will present its foundations and key influencers. Then, I will discuss how integrative transdisciplinarity may represent a useful approach to further our knowledge of sporting creativity.

5.2. Distinguishing multi-, inter- and transdisciplinarity

Although often used interchangeably, *multidisciplinarity*, *interdisciplinarity*, and *transdisciplinarity* have important differences. Just like with definitions of creativity, there are multiple conceptualisations of each of the three terms (for a comprehensive review see Choi & Pak, 2006), which may not only generate some confusion but also influence their operationalisation.

Klein (2013) claims that the concept of transdisciplinarity arose from the first-ever conference of the Organisation for Economic Cooperation and Development (OECD) on interdisciplinary research and teaching, which took place in France, in 1970. Based on the work of Apostel and colleagues (1972), she reports that at the time interdisciplinarity was defined as an "interaction among disciplines that may range from simple communication of ideas to mutual integration of organizing concepts, methodology, procedures, epistemology, terminology, data, and the organisation for research and education" (Klein, 2013, p.190).

At the first and least integrated level – multidisciplinarity –, "researchers work in parallel, or sequentially, from their disciplinary-specific base to address a common problem" (Rosenfield, 1992, p.1351). In turn, interdisciplinary research leads scholars to work together to tackle a common problem, while maintaining their disciplinary base. Finally, the third level – transdisciplinarity – means that "researchers work jointly using a shared conceptual framework, drawing together disciplinary-specific theories, concepts, and approaches to address a common problem" (1992, p.1351). Therefore, transdisciplinarity is inquiry-driven, meaning that it aims to gain a better understanding of 'real world' problems and highlights their systemic, multi-level complexity. Consequently, its positioning implies being at once "between all disciplines, across the different disciplines, and beyond all disciplines" (Nicolescu, 2014, p.19). Although recognising that multidisciplinary and interdisciplinary approaches have great potential, Stokols (2018) considers transdisciplinarity as the most promising, because by promoting conceptual synthesis and innovation, it enables investigators to formulate broader research questions, and to integrate different theoretical and methodological viewpoints. Furthermore, he includes transdisciplinarity as one of four T's of 21st-century research, together with 'team-based', 'transcultural', and 'translational'.

The development of transdisciplinary research has led scholars to explore different levels of depth and to propose varying definitions. On the one hand, Klein (2013) and Rosenfield (1992) suggest that multi-, inter-, and transdisciplinarity are positioned along a progressive continuum. Consequently, albeit multidisciplinarity, interdisciplinarity and transdisciplinarity have common aspects, transdisciplinarity occupies the higher end of the interdisciplinary continuum, going beyond the mono-disciplinary scope to attain an 'overarching synthesis' (Klein, 2013). Nonetheless, Pohl (2010) argues that all transdisciplinary approaches share at least two of the following four common features: "the focus on socially relevant research, transcending and integrating disciplinary paradigms, doing participatory research, and the search for a unity of knowledge beyond disciplinary research" (Pohl, 2010, p.66). Adopting transdisciplinary approaches and integrating some - or all - of these features into the research process can be useful to help advance a currently hyper-specialised field like that of creativity research, including sporting creativity. However, before delving deeper into how the study of creativity in sport can benefit from transdisciplinarity, it is important to present its philosophical foundations.

5.3. The foundations of transdisciplinarity

Whilst there may be several conceptualisations of transdisciplinarity, Nicolescu's investment into uncovering its deeper, philosophical underpinnings is singular, surpassing the traditional boundaries of scientific research (Augsburg, 2014). Three methodological axioms can be found in Nicolescu's (2014) transdisciplinarity: ontological, epistemological, and logical. Based on findings from quantum physics, the ontological axiom admits the existence of different levels of reality of both object and subject in Nature and our knowledge of it. Max-Neef (2005) explains that philosophers like Husserl and Popper and scientists like John Eccles postulated throughout the 20th century the existence of different levels of perception of reality and multi-dimensional realities. Popper and Eccles described three worlds – one encapsulating all objects and physical states, including the brain; a second world, which contained consciousness and subjective experiences; and a third world, produced by human beings, which included language (Max-Neef, 2005). Additionally, physicist Werner Heisenberg coined a similar theory in 1942, in which he proposed three 'regions of reality': the first pertaining to classical physics; the second to psychic phenomena, biology,

and quantum physics; and the third to religion, philosophy, and the arts (Max-Neef, 2005).

Nicolescu conceptualises reality as what may exist prior to and beyond experiences, verbal, numerical, and non-verbal representations (Nicolescu, 2014). Reality refers to all things visible and non-visible, fictional and non-fictional, that produce an effect on something else. For example, transdisciplinarity accepts the existence and impact of social constructions, but it is not limited to them. Therefore, in line with other, recent paradigms proposed for sporting research such as critical realism (North, 2017), reality is not exclusively external or internal to the individual. It is flexible, as the individual has a degree of agency to shape reality through thoughts, feelings, and actions. Nicolescu has himself devised a model which is composed by two levels of reality (Nicolescu, 2006; 2010): the Transdisciplinary-Subject, which includes individual, social, historical, and political realities; and the Transdisciplinary-Object which covers environmental, cosmic, and economic realities.

Nicolescu's model contemplates the so-called 'Hidden Third', which plays a "mediating role of 'a third' between external information and internal consciousness and perceptions" (McGregor, 2018, p.187), allowing for a temporary conciliation of apparent contradictions. Moreover, he contends (Nicolescu, 2014) that there is no single fundamental level, defending that each level is characterised by *incompleteness*, as the potential existence of laws applicable to one level does not mean they can apply to another. Finally, Nicolescu explains that reality is not exhausted by the sum of all laws, meaning that the interaction between Subject and Object must be taken into account:

> "the zone between two different levels and beyond all levels is a zone of non-resistance to our experiences, representations, descriptions, images, and mathematical formulations. Quite simply, the transparency of this zone is due to the limitations of our bodies and of our sense organs - limitations that apply regardless of what measuring tools are used to extend these sense organs." (2014, p.22)

The zone of non-resistance is vital for the transdisciplinary approach, as it simultaneously differentiates and unites Subject and Object. The notion of interdependence is also crucial for the epistemological axiom, which defines the structure encapsulating all levels of reality as a complex one, where the existence

of each level relies on the simultaneous existence of all other levels. Finally, the logical axiom posits that it is possible to move from one level of reality to the other through a concept titled ‘the included middle’. This implies that concepts that may appear contradictory at two different levels can temporarily be conciliated at yet another level. A pertinent example to illustrate this logical axiom is Niels Bohr’s seminal discovery regarding light’s wave-particle duality. The Danish physicist, winner of the Nobel Prize in 1922, saw in paradoxes opportunities for making progress (Moore, 1966).

In a similar vein, integrative approaches, such as transdisciplinarity, are not aimed at dismissing the importance of reductionism to advancing knowledge. Rather, they recognise its value, suggesting nonetheless that it should be complemented by other methodological proposals, to tackle complex issues such as those emerging in sporting environments. The need to unite – and integrate – reductionist and holistic perspectives, rather than insisting on their separation has been highlighted by very influential thinkers, such as Edgar Morin and Gregory Bateson, whose ideas I will introduce next.

5.4. The influence of Edgar Morin and Gregory Bateson

Nicolescu’s work on transdisciplinarity is largely aligned with the reflections of French philosopher and sociologist Edgar Morin (Augsburg, 2014). Similarly, the work of Gregory Bateson mirrors many of their ideas. Indeed, both Morin and Bateson have been heavily critical of the logical positivist paradigm reigning in Western societies - and scientific communities -, which Bateson designated “the paradigm of simplification” (Morin, 2001, p.16). Morin enumerates three principles that characterise this Cartesian simplification aimed at the revelation of universal laws and order: disjunction, reduction, and abstraction.

Disjunction refers to the separation between Subject and Object, social and natural sciences, philosophical reflection and so-called scientific knowledge. Reduction is based on the idea that to know something, it is vital to reduce it to the smallest parts, which can then be studied independently. Finally, abstraction regards the removal of variables considered exogenous to the object, which must be isolated prior to being analysed. Such decontextualisation has been heavily criticised by Morin (2001), who argues that

> “the intelligence that only knows how to separate, breaks down the world’s complexity into separate fragments, fractionating the problems,

transforming the multi-dimensional in one-dimensional. It hampers the possibilities of understanding and reflection, eliminating the opportunities of a corrective judgement as well as of a long-term vision." (p.14)

The distinction between closed and open systems is useful to explain why the reductionist approach, by itself, is neither sufficient nor appropriate to fully understand living organisms in their complexity. Von Bertalanffy, one of the precursors of General System Theory (GST), posited that "a system is closed if no material enters or leaves it: it is open if there is import and export and, therefore, change of the components" (1950, p.23). A closed system, like a chair, is in a state of equilibrium, as there are no energy/matter exchanges with its exterior. However, living systems are open systems, because they operate exchanges of matter with the environment, continuously dismantling and rebuilding their components. In humans, this means that although we may have a relatively stable perception of self or identity, our survival depends on our body's ability to renew its cellular components.

Despite humans – and particularly the human brain - being frequently compared to machines, they have important differences. Morin (2001) explains that the parts of a machine are very reliable, made of long-lasting materials, developed specifically to resist the demands of their mission. However, the whole machine is very fragile in comparison to its parts, as it takes only a malfunction in a small part of an engine to keep the whole engine from working. In opposition, the living machine that is the human body (whole) is much more resilient than its molecules (parts).

Living systems undergo continuous processes of disintegration and re-organisation, in what Morin calls an "extraordinarily complex phenomenon of self-eco-organisation that produces autonomy" (2001, p.21). Therefore, when studying living organisms, reductionism is not sufficient by itself, as it only considers the parts in isolation. Montuori (2013) argues that such an approach deprives people of their humanity. Notwithstanding, holism is also not the answer, as it only looks at the whole. A genuinely complex approach should identify and reflect on relations of interdependency between the parts and the whole. Thus, it must integrate reductionism and holism, as both provide useful lenses for a better understanding of different levels of reality.

Morin and Bateson have been heavily critical of the decontextualised, logical positivist approach prevailing in modern and contemporary academia, calling for its urgent reformulation. Bateson (2002) argued that:

> "without context, words and actions have no meaning at all. This is true (…) of all communication whatsoever, of all mental process, of all mind, including that which tells the sea anemone how to grow and the amoeba what he should do next." (p.14)

Bateson adds that although universities deal with cutting-edge topics and techniques, the assumptions and premises on which they base their teaching are obsolete. As such, the adoption of transdisciplinarity is urgent because:

> "at present, there is no existing science whose special interest is the combining of pieces of information. (…) The evolutionary process must depend upon such double increments of information. Every evolutionary step is an addition of information to an already existing system (…), so the combinations, harmonies, and discords between successive pieces and layers of information will present many problems of survival and determine many directions of change." (Bateson, 2002, p. 19)

Similarly, Morin (2002) argues that it is essential to reform the way we think and conduct research because the phenomenon of hyper-specialisation prevents us from having both a global perspective (due to fragmentation) and distinguishing what is essential (due to a process of dissolution). He contends that:

> "the disciplinary developments of science only brought the advantages of the division of labour. However, they also brought the inconvenience of over-specialisation, compartmentalisation, and fragmentation of knowledge. Not only have they produced knowledge and education, but they also produced ignorance and blindness." (Morin, 2002, p.15)

Although it may be evident that changing the *status quo* is necessary and that transdisciplinary approaches are not only relevant but urgent, its implementation may be a laborious, lengthy process.

5.5. The 'crisis' of creativity research

The field of psychology of creativity is not immune to the problems affecting academia. Indeed, Hennessey and Amabile (2010) have claimed that the field is fragmented and dispersed. In 2014, Glăveanu went further and declared a state of 'crisis' in the field of creativity. He justified it in with the asynchrony and

lack of communication between researchers focusing on ‘opposing’ paradigms, methodologies, and philosophical stances. With regards to sporting creativity, such ‘crisis’ has not yet been declared. There is a clear prevalence of a logical positivist approach in the literature (Fardilha & Allen, 2019) –, and evidence of the influence of one researcher, who authored or co-authored 44% of the peer-reviewed publications on creativity in sport between 1967 and 2018 (Fardilha & Allen, 2019).

Lab-based, decontextualised work, with little ‘real-world’ applicability, continues to be conducted (e.g. Moraru, Memmert, & Van der Kamp, 2016). However, in the past five years the field has witnessed a growth in researchers, which has been accompanied by the introduction of different paradigms (e.g. Rasmussen et al., 2017; Tanggaard, Laursen, & Szulevicz, 2016) and gender diversity (e.g. Santos et al., 2016, 2017, 2018; Richards et al., 2017). Moreover, multi-disciplinary (e.g. Santos et al., 2016) and transdisciplinary (Vaughan et al., 2019) approaches have started to emerge.

Despite these positive signs more active contributions to the research process from practitioners (Montuori, 2019) – e.g. coaches - and other relevant stakeholders are still lacking (e.g. players, directors, and scouts). Their effective integration in investigations related to sporting creativity may not only fulfil the transdisciplinary features of participatory and socially relevant research, but can also contribute to more representative processes of meaning-making and co-construction of knowledge (Valsiner & Rosa, 2007). Furthermore, transdisciplinary approaches may be instrumental in playing the much-needed role of weaving together what exists within disciplines (Montuori, 2019) and multiple agents, in what Boyer, Moser, Ream, and Braxton (2015) called a *scholarship of integration*. As a result, a more thorough understanding of such a complex phenomenon like sporting creativity can emerge.

5.6. The potential of integrative transdisciplinarity

Alfonso Montuori has been the strongest advocate for the transdisciplinary movement in creativity research (see, for example, Montuori, 2010; 2013; 2014; 2019; Montuori & Donnelly, 2016). On the one hand, his work is largely inspired by his own experience of living in different countries, while being simultaneously a jazz musician and academic. Similarly to Nicolescu (2014), Montuori draws from Morin and Bateson to propose what he termed *Integrative*

Transdisciplinarity, an approach that "does not reject disciplinary specialisation but seeks to complement it" (2018, p.412). Integrative Transdisciplinarity aims to help making sense of the informational overload affecting many citizens worldwide –academics included -, and is aligned with definitions of creativity as distributed, situated, and relational, proposed by cultural psychologists (e.g. Tanggaard, 2013; Glăveanu, 2014; 2018; Glăveanu, Tanggaard & Wegener, 2016). According to Montuori (2005), there are four core principles guiding this transdisciplinary approach: transdisciplinarity is inquiry-driven instead of merely discipline-driven; it is meta-paradigmatic rather than only intra-paradigmatic; it is inspired by creative, contextualising, and connective thinking, in line with Morin's (2001) suggestion; and finally, it encourages the combination of rigour and imagination.

An inquiry-driven approach means that 'real-world' problem-solving is prioritised in detriment of furthering any disciplinary agenda. As such, the inquirer is not restricted to the traditional disciplinary boundaries but does not refuse the contribution of disciplinary knowledge. While navigating the inquiry, the inquirer considers a plurality of approaches, which interact with his/her values, beliefs, and experiences. Undertaking a meta-paradigmatic approach implies that the inquirer attends not only to the disciplinary knowledge of a plurality of fields and perspectives but also to the underlying assumptions attached to them.

As referred to above, when describing the ontological and epistemological positioning of transdisciplinarity, the existence of different levels of reality and their interdependency is accepted. For example, the integration of cognitive psychologists (traditionally linked to logical positivism) and sociologists (typically associated with social constructionism) in research teams could be encouraged, as it may represent an opportunity for creative advancement. While its implementation may not be easy, there have been positive examples of transdisciplinary initiatives such as the creation of the Centres for Population Health and Health Disparities (CPHHD) in the United States of America in 2003, where researchers from across various disciplines collaborated to define a common model, which considered how "multiple levels of influence, from the molecular to the societal, interact in complex ways to produce cancer disparities" (Gehlert, Murray, Sohmer, McClintock, Conzen, & Olopade, 2013, p.3).

Given the multifaceted, complex nature of the phenomenon, and its importance for developing human potential (Vaughan et al., 2019), the exploration of creativity could benefit from being studied from an integrative transdisciplinary approach. The ethos of connecting, rather than opposing, and its ambition to address 'real world problems' make transdisciplinarity a suitable lens for weaving together existing thinking and research. Furthermore, it can aid in the promotion of opportunities for other stakeholders to contribute actively to the advancement of knowledge. Finally, by clarifying the role and assumptions of the inquirer, integrative transdisciplinarity can also improve the transparency of the research process as it will enable the reader(s) to evaluate the findings against the inquirer's worldview and potential biases.

5.7. Rigour and trustworthiness in transdisciplinary research

Similarly to the definition of creativity, the evaluation of qualitative research is also a non-consensual topic (Burke, 2016). While in quantitative research, commonly informed by logical positivism, criteria of validity, reliability, and generalisability (Patton, 2002) are well-established and widely accepted, in qualitative research there is still a debate surrounding the issue of research quality (Smith, Sparkes, & Caddick, 2014). Indeed, Burke (2016) identifies two main approaches for the evaluation of qualitative work: criteriological and relativist. The first is influenced by the seminal work of Lincoln and Guba (1985), who proposed the adoption of universal criteria to establish trustworthiness, which Shenton (2004) suggests mirror those of positivism: credibility (instead of internal validity); transferability (instead of generalisability); dependability (instead of reliability); and confirmability (instead of objectivity). In accordance to this approach, researchers should, for example, use multiple perspectives to analyse a research question (i.e. triangulation), or give the transcript of an interview back to a participant for verification (member checking).

However, Burke (2016, pp.332-333) claims that "applying universal criteria to judge research that is underpinned by an ontological position wherein reality is considered multiple and subjective, is deemed inappropriate, [and] akin to trying to fit a square peg into a round hole". Therefore, while not suggesting that 'anything goes', the relativist approach refuses universal, 'one-size-fits-all' criteria, inviting researchers to choose instead evaluative criteria that are based on the study's specific goals and methods, taking into account contextual variables

(Sparkes & Smith, 2009). While used on an open-ended, ad-hoc basis, many of the criteria proposed by the relativist approach (e.g. Smith & Caddick, 2012) are similar to those suggested by Lincoln and Guba (1985), e.g. credibility, which refers to the importance of the researcher spending an extended amount of time on the field/with participants (akin to 'prolonged engagement'); transparency, which, similarly to Lincoln and Guba's (1985) 'confirmability' relates to the use of critical friends as a way of enhancing the authenticity of the findings while mitigating potential biases of the inquirer.

As described at the beginning of this chapter, transdisciplinarity research aims to respond to 'real world' problems and is not aligned with 'either-or' perspectives (Montuori, 2019). Instead it favours the integration of philosophical stances and methodological approaches (Stokols, 2018) hitherto deemed as incompatible (e.g. logical positivism and interpretivism). In that vein, while there are still no clear indications on how research quality can be established in integrative transdisciplinary work, for the purpose of this thesis I deemed appropriate to adopt Montuori's (2019) suggestion to 'weave together' knowledge from different disciplines and extend it to my methodological reflections and choices. This meant that I did not try to limit myself to the artificial boundaries of one single paradigm or theory, and related methods and techniques of inquiry, but focused instead on prioritising approaches that respected the characteristics of the 'real world problem' at hand.

Indeed, many of the steps to enhance the trustworthiness of my research could easily fit a criteriological or relativist approach, e.g. conducting research on a wide number of academies with highly qualified and experienced practitioners; inviting participants not only to check transcripts of interviews but also to discuss preliminary findings; promoting frequent debriefs with my supervisors and critical friends (not only within academia but also practitioners with knowledge and experience of professional academy settings); using different methods to gather data, such as individual and dyadic interviews, focus groups, observations; writing a reflexive journal along my field notes; using an established theoretical framework – Tanggaard's (2014) situated model of creative learning – to inform my analysis in studies 2 and 3; offering extensive quotes from participants and field notes to support my reflections; offering 'thick' descriptions of the contexts

(e.g. chapters 4, 7, and 8) and methods (e.g. chapters 3, 4, 7, 8) used throughout my research.

However, the key reflection regarding research quality that oriented my whole research process could be condensed into one simple, yet complex question: how consistent were my research designs, operational procedures ('on the field') and reflective analysis with the characteristics and objectives of transdisciplinary research, i.e. how well did I represent and address the 'real world' problem of creative development in youth professional academies that I set out to investigate at the beginning of my PhD? This while recognising that as the inquirer my previous experiences and beliefs will have somehow shaped many of my choices and analyses. As Montuori suggests, "the inquirer is not transparent, not a bystander. The reasons for the inquiry, the philosophical and methodological approaches that are brought to bear, these are all brought by the inquirer to the inquiry – by somebody from somewhere" (Montuori, 2013, p.205). Consequently, it is imperative that I, the inquirer, disclose my understanding of *who* I am, and *where* I come from and how that comes to bear on the work presented in this thesis.

5.8. Positioning the inquirer: a brief account of my background

Transdisciplinarity does not attempt to artificially remove the inquirer from the inquiry (Montuori, 2005), in an attempt to advocate for an illusion of objectivity, which constitutes one of the most significant challenges for positivism. As such, instead of seeking a pseudo-neutrality, often encouraged in academic settings (e.g. via formal, third-person academic writing), the "inquirer's motivations, are explored, assessed, and contextualised" (Montuori, 2005, p.10). This requires the inquirer to disclose his/her motivations for conducting the inquiry, together with his/her personal history and academic trajectory. As posited by Montuori (2005), the inquiry becomes self-inquiry, and the interaction between self and others becomes visible in the research process. Other methodological philosophies, like constructionism and 'critical' traditions, also recognise the interference, and impact of the researcher in his/her research. However, Hammersley (2013, p.34) explains that in the 'critical' tradition, inspired by Marx, research "should be geared to serving political goals".

This perspective positions the inquirer as an activist and has inspired for example, feminist, queer, and social justice researchers. In turn, constructionists

contend that perception and cognition are active processes, where “anything apparently ‘given’ is actually a product of processes of selection and construction” (2013, p.36). Researchers are not exempt from these processes, and according to social constructionists, they are themselves unavoidably implicated “in the processes whereby social phenomena are constructed” (p. 37). Such engagement also applies to transdisciplinary research(ers). Augsburg (2014, p.233) explains that “transdisciplinarity presupposes an individual ethics, a desire to improve society and to contribute to the advancement of the common good”. However, should that not be the motivation of all researchers, no matter their beliefs, assumptions, and inherent philosophical and methodological positioning? Therefore, in this thesis, I will acknowledge my background, assumptions and motivations, describing as well in the upcoming chapters, the context(s) in which the elaboration of this work took place.

Born in France, in 1986, in a family of teachers and academics, I spent the almost entirety of my childhood and youth in the suburbs of Porto, the second-largest city of Portugal. My childhood sporting experiences were limited to physical education classes and amateur handball. At the age of 15, I joined a futsal club, and despite my visible lack of motor skills the continuous trust and support from my coach were instrumental for me to develop a passion for the sport and for the role of the coach. I have been a futsal coach since the age of 18, with experiences at grassroots, senior (men and women), and international level, having coached in Portugal, Italy, and Scotland. Between July 2020 and March 2021 I worked as Assistant Academy Manager in LOSC Lille, a French professional club.

With regards to my academic background, I took up Economics as a specialisation in secondary school, moving on to University, where I studied four different disciplines: Law and Journalism, Cinema, and Sport Science and Coaching. Professionally, I have worked in sports journalism, sports public-relations, and hospitality, having lived in Rome, London, the Seychelles, Scotland, Germany and France. These experiences have allowed me to learn six different languages and experience different cultures - Portuguese, Italian, Spanish, French, English, and German – which, in turn, enabled me to read widely.

Having a broad life and academic experience has certainly influenced my care for transdisciplinarity and the importance of recognising contextual

influences: the daily lives, concerns and aspirations of Londoners and Seychellois could not be more disparate. Moreover, along my coaching path I have been influenced by the work of Professor Vitor Frade, a former lecturer in Football Training at the University of Porto, who in the late 1970s, invented a coaching methodology called Tactical Periodisation (Reis, 2018; Tobar, 2018; Tamarit, 2016). Tactical Periodisation was largely inspired by the ideas of transdisciplinarity, systems theory, cybernetics, and the work of Edgar Morin, Fritjof Capra, and neuroscientist António Damásio. Frade, dubbed by the New York Times as "soccer's most magnificent mind" (Smith, 2017) is himself an example of a transdisciplinary individual, having studied in the Faculties of Medicine, Sport, Engineering, and Philosophy. He refuses the traditional separation between tactical, technical, physical, and psychological 'corners', typical of logical positivism:

> "Football is not a linear process. It is not a sum of things: If you do this, plus that, you will achieve this. [Instead] the coach must consider every aspect, of the individual, of the team. Football is not two-dimensional. It is multidimensional." (Frade, in Smith, 2017, p.8)

Frade's teachings, together with my personal, academic, and professional background have influenced my worldview, and I must recognise an identification with transdisciplinarity's ontological and epistemological underpinnings. In my perspective, the complexity of the 'real world' can only be understood through systemic, multi-level, participatory, and contextualised approaches. Integrative transdisciplinarity possesses those characteristics. Therefore, I trust that it may be useful for simultaneously expanding and uniting what we know about creativity in sport, and particularly in professional youth football academies.

5.9. Summary

The social, economic, scientific, and technological developments that Humanity has witnessed in the past century have brought with them an increased complexity to all areas, including sport. This complexity poses challenges that the exclusive adoption of traditional research approaches has failed to deal with adequately (Morin, 2002; 2008). On the one hand, the use of a traditional logical positivist approach, solely based on metrics, may be appealing in providing an illusion of control and certainty, but it has become evident that it cannot succeed in tackling complex issues by itself (Van Regenmortel, 2004), especially those

involving living organisms (open systems). Similarly, purely holistic approaches are also insufficient for a better understanding of complexity (Fang & Casadevall, 2011), as they dismiss the importance of knowing the parts in detail, something required for a sound comprehension of the whole (Morin, 2008). These two approaches ignore relations of interdependency that a third way, a transdisciplinary approach, can succeed in identifying. Transdisciplinarity is gaining traction in different fields, and creativity and sports are no exceptions (e.g. Vaughan et al., 2019; Toohey et al, 2018).

Indeed, Montuori's (2019) suggestion of this integrative route has the potential to become instrumental in weaving together a highly fragmented arena like creativity, where researchers have often been working in isolation and opposition. For example, while scholars like Glăveanu, Tanggaard, or Montuori seek to expand the traditional, disciplinary-bounded conceptualisation of creativity, others, like Weisberg, are calling "psychologists to regain control over the study of creativity" (2015, p.119). In line with the latter, one of the main journals dedicated to creativity, the *Creativity Research Journal*, decided to publish exclusively quantitative research (Glăveanu, 2014). Transdisciplinarity can also play an important role in increasing diversity and 'real-world' applicability to the work being conducted in the field of sporting creativity. While it is still very much embedded in a single, logical positivist paradigm, the last five years have witnessed an increasingly wider and more diverse research in the field, which has resulted in the exploration of new research paradigms and methods.

Other than serving its primary purpose of providing a better understanding of complex issues, transdisciplinary research may also render the research process more transparent. This can be achieved by refusing the pseudo-neutrality of the inquirer and instead, inviting self-reflection and the clarification of the inquirer's beliefs and assumptions. The meta-paradigmatic nature of integrative transdisciplinarity (Montuori, 2019) provides researchers with a way forward – to recognise and acknowledge contributions from different paradigms, and to integrate these in order to deepen our understanding of creativity in general, and in sport, including football. Indeed, researchers in the fields of so-called mainstream and sporting creativity are in a privileged position for promoting transdisciplinarity: if they really celebrate 'openness to experience', then they

should not pose barriers “to these important sources and to important larger questions” (Montuori, 2014, p.247).

In the next chapters I will provide a transdisciplinary account of creativity in football academies, through three different yet interdependent studies. The first will focus on the situated nature of creativity, exploring how practitioners – coaches and scouts – within football academies of three different countries (United Kingdom, Portugal, and Italy) conceptualise creativity, and how they relate – or not - to existing definitions and programmes for its development. Doing so, I will also contribute to answering Montuori´s (2019) call for a higher involvement of practitioners in the research process.

The second study results from my experience of being embedded in the football academy of a professional Portuguese club, accompanying an under-13 football team. From personal observations, field notes, and interviews with players, coaches, other academy staff, and parents, I will discuss the interactions between players and their social environment, using Tanggaard´s (2014) situated model of creative learning as an analytical tool to reflect on the challenges and opportunities for creative development in professional youth football academies.

The third study will use the same framework to compare and contrast the findings in the academy with the developmental journey of Manchester City and Portuguese National Team player Bernardo Silva. A biographical case-study, uniting media research with interviews with his mother, former coaches and teachers and Bernardo himself, will enable a better understanding of the situated sporting and personal growth of a player who is consistently described as ‘super-elite’ and eminently creative and won, in 2019, ESPN’s prize for the World’s best attacking midfielder (ESPN, 2019). Finally, I will move to a general discussion on the importance of rethinking conceptualisations of creative development using a transdisciplinary lens if professional youth football academies are to succeed in their mission of developing more creative players and citizens.

Chapter Six: Exploring perceptions of creativity in professional football academies - a collaborative cross-national study

6.1. Introduction

In previous chapters I have explained that most research on sporting creativity to date was inspired by earlier work from cognitive psychologists and aligned with a reductionist paradigm, which resulted in limited ecological validity (see chapter 3). I have also proposed that such limitations could be mitigated through the adoption of more inclusive, participatory approaches to research like Montuori's (2019) integrative transdisciplinarity (see chapter 5), which moves beyond intra-individual conceptualisations of creativity to include and reflect on its dynamic, psycho-socio-cultural and material nature (Lebuda & Glăveanu, 2019; Tanggaard, 2013). In making the case for the suitability of an integrative transdisciplinary approach to creativity research, Montuori (2019) suggests that both scholars and practitioners could benefit from establishing closer dialogue. In that vein, the present study does not aim to dismiss earlier work on sporting creativity based on positivist assumptions. Instead, it contributes to the advancement of knowledge by complementing previous research on the topic with a more in-depth contextualisation of creativity in professional football academies through the voices of expert practitioners, in line with similar, recent approaches undertaken not only on sporting creativity (e.g. Rasmussen et al., 2020), but also in applied sport psychology (e.g. Champ, Nesti, Ronkainen, Tod, & Littlewood, 2020).

Widely recognised as central figures in player identification, recruitment and development (Larkin & Reeves, 2018; Sieghartsleitner, Zuber, Zibung, & Conzelmann, 2019), coaches are often used as expert raters on sporting creativity studies (e.g. Memmert, 2007; Memmert & Furley, 2007; Memmert Baker, & Bertsch, 2010; Greco, Memmert, & Morales, 2010; Furley & Memmert, 2015, 2018; Hendry, Williams, & Hodges, 2018; Roca, Ford, & Memmert, 2018). Nonetheless, research on their perceptions of sporting creativity is still scarce (Fardilha & Allen, 2019). This may be problematic, especially if one considers the transactional relationships between the conceptualisations of some constructs and their operationalisation identified in earlier chapters (e.g. creativity - see chapters 2 and 3-, and talent - see chapter 4).

6.2. Coaches' perceptions of creativity in football

The *Thomas theorem* summarises the importance of perceptions: "if men [sic] define situations as real, they are real in their consequences" (Thomas &

Thomas 1928, p.572). Such perspective is highlighted by recent approaches to research on creativity (e.g. Montuori's (2019) integrative transdisciplinarity) and sport coaching (e.g. North's (2017) adoption of a critical realist lens), that highlight the contribution of both subjective and objective data for knowledge formation, as well as their interactions. Nonetheless, only three studies have been hitherto devoted to the investigation of practitioners' perceptions of sporting creativity.

In 2010, Oh and colleagues published a conference paper based on a study with 52 South Korean football coaches who completed open-ended questionnaires during a coach education (B and C license) event. They found that coaches associated creativity with unpredictability, improvisation and mediation, and that fundamental skills and self-determination were considered key for creative development. Moreover, coaches revealed that personal experience was their only source of knowledge regarding creativity and that there were several challenges to its promotion, e.g. pressure to obtain results, league organisation, lack of appropriate playing surfaces and autocratic coaching styles. In turn, Leso and colleagues (2017) examined perceptions of creativity and game intelligence among 34 youth coaches (under-15 to under-19 age groups) in a single Portuguese club. They applied close-ended questionnaires based on Roth and Raab's (1998) work, revealing that coaches strongly associated creativity with magical thinking, which Leso and colleagues (2017) related to irrational behaviour. Moreover, the authors speculated that "this magical thinking might emerge from players' creativity, as well as their psychomotor capacities, though it is not possible, rationally, to know how this process occurs and which variables emerge from it" (2017, p.185).

More recently, Rasmussen and colleagues (2020a) took a phenomenographical, pragmatic approach to explore in further depth perceptions of football creativity within a Danish elite academy. Phenomenography is "an empirically based approach that aims to identify the qualitatively different ways in which different people experience, conceptualize, perceive, and understand various kinds of phenomena" (Richardson, 1999, p.53). Based on the premise that practitioners' conceptualisations and assessments of creativity are influenced by their biographies, Rasmussen et al. (2020a) conducted semi-structured interviews with 18 members of staff, including performance and grassroots coaches, a talent

director, and one scout. They identified 15 different metaphors – e.g. invention, magic, circus, independence, co-creation – illustrative of the diversity of creativity conceptualisations in a single football environment. These metaphors were framed under four general categories, which summarised practitioners' beliefs regarding the potential benefit of creativity(ies): helping players solve complex problems in games, facilitating players' learning and developing by sparking curiosity, maintaining engagement by stimulating gratification, and improving winning probabilities by developing players' abilities to perform decisive actions.

More importantly, Rasmussen et al.'s (2020a) findings showed that "conceptual understandings of creativity guide coaches' interpretations of players' behaviour and abilities, what kinds of actions they recognise as creative, which players are believed and allowed to be creative, and how they chose to promote creativity" (p. 261). This exploratory approach led to findings that challenge prevailing conceptualisations of creativity (i.e. cognitive) and support a 'socio-cultural turn' in creativity research which recognises the phenomenon as "distributed, collective, and socially embedded" (Sawyer, 2014, p.xiii). Nonetheless, practitioners' perceptions of creativity have to date been investigated in only three countries – Denmark, Portugal, and South Korea, with the majority of studies involving only coaches, being restricted to single club environments, and applying narrow, focused questions.

In line with suggestions that learning more about practitioners' perceptions of creativity "may produce novel insights to develop new frameworks, refine extant ones, or complement previous findings" (Rasmussen et al., 2019, p.3), the present study aimed to examine perceptions of creativity in football of Heads of Academy Coaching (HACs) and Recruitment (HARs) in three different countries (Portugal, Italy, and United Kingdom), with a particular emphasis on: (1) conceptualisations of creativity – e.g. what is creativity and how it is expressed; (2) the origins of creativity – e.g. if creativity is a gift/innate or not and if so-called 'creative players' share socio-cultural backgrounds and personality traits; (3) how creativity can be developed, i.e. types of practice and key stakeholders that may improve or hinder it across time.

6.3. Method

6.3.1. Participants

Heads of Academy Coaching (N=10) (M age=50.8 years, SD=11.3 years), Heads of Academy Recruitment (N=7) (M age=47.4 years, SD=12.9 years) and one Academy Manager (aged 41 years) in three European countries – Portugal, Italy, and United Kingdom (England and Wales) agreed to participate in the study (see table 1 for further demographic detail). HACs are those individuals responsible for leading an academy's coaching programme (Premier League, 2011) and imply high qualifications (minimum UEFA A license), along "with recent and relevant experience developing players in the Academy System" (Premier League, 2011, p.7).

While the definition of Head of Coaching is specific to the English Premier League, similar roles can be found in the other two countries included in this study, albeit with different role designations: Technical Coordinator in Portugal, and Youth Sector Responsible in Italy. In turn, HARs are those people responsible for overseeing the recruitment of players within an academy. Similarly to HACs, HARs usually possess many years of accumulated experience. They also hold high qualifications, which may be specific to their role (e.g. the English FA's Level 4 in Talent Identification) or more generally-related (e.g. coaching licenses or sport-related academic degrees), depending on the country. Such wealth of knowledge and experience in academy staff is increasingly required by national governing bodies for purposes of quality assessment and certification of academies and subsequent funding (van Hoecke et al., 2011). Finally, the Academy Manager is the overall responsible for an academy's operations and strategic leadership (Premier League, 2011).

The option for sampling senior figures in academy environments to learn more about perceptions of creativity is related to their expertise in relation to coaching and recruitment in performance youth contexts (Côté & Gilbert, 2009), resembling the role of 'Head/Master Coach' proposed by the International Sport Coaching Framework (ICCE, ASOIF, LMU, 2013). Moreover, the inclusion of recruitment experts relates to their crucial role in talent identification and selection, which remains largely unregulated across the globe (EPPP, 2011). As responsible for finding and signalling quality players to their clubs, examining

scouts' understandings of creativity may be equally important as exploring the perceptions of those commonly tasked with developing it – i.e. coaches.

Table 1: Participant demographics Study 1

Country	Role	1st team's level	Experience (years)	Qualifications
U.K. (England/Wales)	HAC	Premier League	39	UEFA Pro
	HAC	Premier League	35	UEFA A & Master's degree
	HAC	Championship	18	UEFA A & FA Advance Youth
	HAR	Premier League	19	FA Talent ID level 4
	HAR	Championship	11	FA Talent ID level 4
	Academy Manager	Championship	20	UEFA Pro
Italy	HAC	Serie A	15	UEFA Pro & Sporting Director
	HAC	Serie A	35	UEFA Pro & Sporting Director
	HAC	Serie B	21	UEFA Pro & Sporting Director
	HAR	Serie B	29	None
	HAR	Serie B	21	UEFA Pro & Bachelor Degree
Portugal	HAC	Primeira Liga	17	UEFA A & Youth Technical Director & Master's degree
	HAC	Primeira Liga	32	UEFA A & Master's degree
	HAC	Primeira Liga	18	UEFA A & Youth Elite & Master's degree
	HAC	Primeira Liga	18	UEFA Pro & Master's degree
	HAR	Primeira Liga	12	UEFA C & Master's degree
	HAR	Primeira Liga	17	Master's degree
	HAR	Primeira Liga	3	UEFA B & Master's degree

All participants played a key role on conceptualising, developing and implementing coaching and recruitment programmes – documents designed to guide all staff within an academy towards achieving its primary purpose of identifying, selecting and developing future professional players that can represent National teams and play at first team level (Premier League, 2011). Furthermore,

they had accumulated significant experience and education in football coaching and held responsibilities with regards to in-house staff education. With the exception of one Head of Recruitment working in a smaller Portuguese Primeira Liga club (who nonetheless held a UEFA B license and a Master's degree in YouthSports Training), all participants were employed full-time and had at least 10 years of experience (M=21.1 years, SD=9.4 years) in coaching and/or recruitment. These criteria – performance level, years of coaching experience, and coaching qualifications – have been commonly used in other academic studies with so-called expert coaches (e.g. Cooper & Allen, 2018). Finally, the option for studying three different countries is justified with potential differences in conceptualisations of football-creativity in nations traditionally associated with different styles of football and socio-cultural values: Italy's cynical privileging of defensive rigour and lethal counter-attacking, the *catenaccio* (Ruiz Sosa, 2015), Britain's direct and intense 'energy-football' (Tenga & Larsen, 2003), and Portugal's 'border-style', "a mixture of talent and skill typical of Latin football (…) with the creativity and improvisation of African football" (Coelho, 1998, p.168).

6.3.2. Procedure

After ethical approval was obtained, all academies of clubs participating in the top two professional leagues in each country were contacted via e-mail with a description of the study and a request for their collaboration (see Appendix 1). Initially only one club replied, refusing to participate. Given the extremely low initial response rate, a convenience sample was used, based on my pre-existing contact network within academia and different football organisations. Participants were contacted and invited to participate via a gatekeeper in each country (e.g. NGB representative, fellow coach, former player), resulting in 10 Heads of Coaching, 7 Heads of Recruitment and one Academy Manager agreeing to participate in the study. Data were collected in face-to-face, semi-structured interviews conducted between December 2017 and September 2018, at dates, times and locations that were convenient to the participants. Interviews were conducted in three separate periods – first in Italy (December 2017), then in England and Wales (between January and March 2018), and finally in Portugal (from April to September 2018). Where possible, HACs and HARs belonging to the same club were interviewed as dyads, and I took the role of facilitator.

The format of dyadic interviews intended to create a space where views, beliefs, opinions, and perceptions could be discussed with someone familiar, favouring therefore openness and confidence (Morgan, Ataie, Carder, & Hoffman, 2013). Simultaneously, it aimed to mitigate traditional power dynamics in academic research. This is particularly important in professional football, an environment usually characterised as a relatively closed social system with a pervasive culture of anti-intellectualism (McGillivray & McIntosh, 2016). In some cases, due to deteriorated interpersonal relations between some HACs and HARs, or difficulties in terms of personal schedules, participants opted to speak individually.

Interviews were audio-recorded with a hand-held digital voice recorder and lasted between 26 and 108 minutes. After each interview, a pseudonym was attributed to each interviewee, depending on the country (GB, PT, or IT), position (C for Heads of Coaching and S for Heads of Recruitment) and the chronological order of the interview (ranging from one to 4). For example, the first Head of Coaching interviewed in Portugal was named as 'PTC1'. Conversations were transcribed *verbatim* and sent to participants for checking. After all transcripts were approved, Italian transcripts were translated to English, via a translation-back-translation method (Brislin, 1970) with the assistance of a native Italian speaker and sport academic. With regards to the Portuguese-English translations, these were performed by me, a native Portuguese speaker with a degree in Communication Science and two decades of English speaking, reading, and writing experience.

6.3.3. Data collection

Playing spaces represent "laboratories of human condition" (Leclerc, 2012, p.5). Indeed, the sporting phenomenon is considered ideal for the observation of society, mirroring its evolution (Silva Costa, 1992). Qualitative research offers the opportunity to investigate human meaning-making and to uncover the reasons that underpin behaviour (Patton, 2014). In turn, interviews allow "participant(s) to tell stories, accounts, reports and/or descriptions about their perspectives, insights, experiences, feelings, emotions and/or behaviours in relation to the research question(s)" (Smith & Sparkes, 2016, p.103). Furthermore, they have been deemed useful to explore perceptions of complex topics like sporting creativity (Rasmussen et al., 2020a).

In line with the aims of the study, semi-structured interviews were conducted, as the existence of a pre-set structure allowed for rough comparisons between countries, clubs, and existing research. In turn, the open-ended nature of questions provided flexibility to ensure that the generation "in the process of novel or additional insights" (Smith & Sparkes, 2016, p.108) would not be compromised. An interview guide (see Appendix 2) was used to prompt the discussion, and contained four groups of questions based on a recent systematic narrative review of the scholarly literature on creativity in sport (Fardilha & Allen, 2019): a) characteristics of a so-called creative player; b) the development and trainability of creativity c) creative environments; d) creativity in the Game.

The first group of questions explored what a creative player is (and if there is such a thing as a 'creative player'), with participants being asked which characteristics – if any - may distinguish creative players from their less creative peers. The second group of questions focused on the origins of creativity – if it is a natural or innate gift, if it can be developed and by whom. The third group of questions referred to what constitutes an appropriate environment for the development of creativity in football, and what kinds of environment may hinder it. The fourth group of questions addressed conceptualisations of creative actions in a football game, and moments/locations when/where players are creative (different phases of the game vs only in attack, in possession of the ball vs without possession of the ball). The interviews generated a total of 146 A4 pages of single-spaced transcripts.

6.3.4. Preliminary Data Analysis

Qualitative analysis is a process of making sense of voluminous amounts of data, driven by a pre-set purpose (Patton, 2014). Thematic analysis, "a method for identifying patterns ("themes") in a dataset, and for describing and interpreting the meaning and importance of those" (Braun, Clarke, & Weate, 2016, p.191), was adopted for this study. Given the fluid, organic nature of qualitative research (Patton, 2014), a preliminary analysis started during data collection, with themes and patterns becoming noticeable after the first set of interviews. Thus, while the existence of an interview guide ensured the maintenance of a similar structure across conversations in different countries, some questions were added based on participants' responses and suggestions (e.g. the importance of timing for creative actions). Furthermore, debriefs with critical friends (e.g. doctoral supervisor, an

Italian sport researcher and two practitioners – one English and one Portuguese), were conducted after each set of interviews and led to self-reflective texts handwritten on a notebook in a total of 18 A5 pages.

6.3.5. Main data analysis

Thematic analysis is a flexible method, detached from strict theoretical frameworks or methodological requirements (Braun, Clarke, & Weate, 2016). Therefore, the primary, comparative aim of the present study led to the adoption of an initially deductive (*top-down*) and subsequently inductive analysis strategy, conducted in accordance to the six-step, reflexive and recursive model proposed by Braun and colleagues (2016): familiarisation, coding, theme development, refinement, naming, and finally the writing up.

Physical copies of the transcripts were read and re-read several times, with an initial cross-case analysis of interviews (Patton, 2014) with HARs and HACs being conducted. At this stage, practitioners' perceptions of football creativity were highlighted with markers and coded based on – although not limited by - three overarching themes (conceptualisations of creativity, characteristics of creative players, developing creativity). These were generated in line with the interview guide, and used to structure the initial analysis (Braun & Clarke, 2013). Subsequent reading and re-coding of the data, this time following an inductive approach, allowed for more refined theme development, so that practitioners' perceptions could be organised and reflected more faithfully. A third coding phase resulted in the generation of lower-order themes (see Appendix 3), which represented distinctive, relevant nuances within themes. The first supervisor also read random excerpts of interviews, comparing and commenting on the initial coding. A draft version of the thematic analysis was then discussed with one of the dyads interviewed in a Portuguese club during a face-to-face meeting in their academy, and via telephone and e-mail with the critical friends that had assisted with debriefings during data collection, resulting in further trimming of the coding structure. At the end of the data analysis process, three overarching themes were defined – 'conceptualisations of creativity', 'characteristics of 'highly creative' players' and 'fostering creativity'. These worked as "central organising concepts" (Braun et al., 2016, p.199) for a total of 7 higher-order and 23 lower-order themes.

6.4. Results

Despite geographical and socio-cultural differences between the countries visited and traditional differences in terms of football philosophy and style of play, overall perceptions of HACs and HARs regarding creativity in football were very similar. There was more variation found across clubs than across countries and only within a residual number of lower-order themes (e.g. 'skill acquisition: teaching or learning?'). The results of the analysis are presented and discussed below, supported by illustrative evidence.

6.4.1. Theme 1. Conceptualisations of creativity in football

This overarching theme aggregates evidence in relation to how HACs and HARs define and identify creativity, as well as their perspectives on the evolution of the phenomenon across time. Two higher-order themes– 'criteria for creativity in football', and 'creativity is dynamic', and five lower-order themes were identified and are summarised in table 2.

Table 2: Summary of higher and lower-order themes (Theme 1)

Higher-order theme	Lower-order theme
Criteria for creativity in football	Originality and flexibility Unpredictability Functionality
Creativity is a dynamic construct	Creativity can occur anytime, anywhere Creativity in football is situated

6.4.1.1. Criteria for creativity in football

This higher-order theme presents and reflects on the constitutive criteria of creativity in football from the perspectives of practitioners. Three lower-order themes are included: originality and flexibility, unpredictability, and functionality.

6.4.1.1.1. Originality and flexibility

Memmert (2011) defined tactical creativity as "those varying, rare, flexible decisions that play an important role in team all sports" (p.94). He used Guilford's (1967) foundational dimensions - originality (uniqueness of responses), fluency (number of different responses), and flexibility (number of different/unusual categories of responses) – to assess it. HACs and HARs were, at least in part, aligned with the concept of tactical creativity in their conceptualisations of

creativity in football, often highlighting the importance of originality and flexibility. PTC2 mentioned that "someone [creative] does something which is not stereotypical, that will force an adaptation of the opponent." Moreover, all participants contended that the expression of creative behaviour goes far beyond traditional associations of creativity with individuals dribbling past various opponents:

> "A lot of people associate the concept of creativity with the player who can dribble. It's much more than that! That could mean combining with a team-mate (…) and in an unexpected way managing to make that pass and varying the corridor. A pass can be a very creative option!" (PTS3)

6.4.1.1.2. Unpredictability

Another criterion frequently referred to by HACs and HARs in all countries was unpredictability. Albeit excluded from most of the prevalent definitions of creativity, which tend to focus on novelty and adequateness (e.g. Stein, 1953; Sternberg & Lubart, 1999), Boden (2004) and Simonton (2012) suggest that surprise is also an important characteristic of the phenomenon. Indeed, participants considered that the actions of so-called creative players are capable of surprising not only their opponents, but also their coaches, team-mates, and even spectators. ITC1 explained that "a creative player is one (...) that finds solutions that are not in anyone else's mind, not even in the coach's mind. And not even in the minds of most players".

Furthermore, HACs and HARs noted that unpredictability does not refer exclusively to the statistical frequency or novelty of an action, but is linked to the timing and quality of execution of a difficult skill (e.g. a bicycle kick or a back-heel pass) too. PTS2 claimed that "[creativity] is being able to apply the right things at the right time. (…) And in football we have examples of players who are not always able to bring both together. Timing is essential for creativity."

6.4.1.1.3. Functionality

HACs and HARs referred to functionality as the most important criterion of all. Indeed, practitioners consider that without goal-directedness and consideration of the context, there is no value in rare or surprising actions:

> "I don't care that the child can perform 10 types of scissor kicks, 15 different dribbles, if the opponent is far away. If we don't contextualise the

> ability to astonish in the game, it really does not matter that much and it does not allow the child to grow (ITC1)."

Such perceptions highlight the importance of convergence for creativity (Dietrich & Haider, 2017) – i.e. selecting an appropriate solution for a given problem - and adaptability, concurring with Orth, van der Kamp, and Memmert's (2017) suggestion of a 'new approach' to motor creativity that emphasises not only variability but also adaptability.

6.4.1.2. Creativity is a dynamic construct

This higher-order theme presents and reflects on the constitutive criteria of creativity in football from the perspectives of practitioners. It comprises two lower-order themes: creativity can occur anytime, anywhere, and creativity is situated.

6.4.1.2.1. Creativity can occur anytime, anywhere

To date, research on creativity in sport has been largely focused on attacking players (Rasmussen et al., 2017; Fardilha & Allen, 2019). After applying a questionnaire to six researchers and 17 coaches at a multi-sport congress, Memmert, Baker, and Bertsch (2010) suggested that creativity can only occur on the offensive phase of a game. Notwithstanding, in a recent exploration of football-creativity perceptions of Danish practitioners, Rasmussen and colleagues (2020a) found that "coaches discerned between creativity on and off the ball, e.g. players who design promising situations with dynamical runs, and defenders who deceive attackers with confusing moves or by exhibiting an unorthodox style" (p. 266). In a similar vein, HACs and HARs interviewed for this study were unanimous in arguing that "we [tend to] see creativity in a very narrow context" (GBC3), proposing instead that it can occur in any phase of the game, independently of ball possession and/or player position. PTC3 suggested that attacking creativity "is easier to see (…), it is much more evident (…). Everyone will identify creativity in that moment. [But] there are unique moments of defensive creativity". PTC1 added that:

> "I have seen endless situations during defensive moments when the players do not have the ball, which result in recovering or intercepting the ball, preventing the opponent from progressing...They were able to find fantastic solutions to solve those problems they had in front of them."

The higher propensity for creative behaviour to occurring in attacking moments is justified by Memmert (2015) with the nature of the offensive tasks and the lower risk commonly associated with them: “attackers are more focused on the ideal (scoring), whereas the tasks of defenders are usually more focused on the target (prevention of scoring).” (2015, p.70) Nonetheless, HACs and HARs contended that there are opportunities for creativity in defensive moments.

6.4.1.2.2. Creativity in football is situated

An increasing number of scholars, especially within socio-cultural psychology, have suggested that creativity should be conceptualised as a quality of human action (Joas, 1996) in permanent evolution (Tanggaard, 2013). As “all human action occurs in a given symbolic, social-institutional, and material context” (Glăveanu et al., 2018, p.3), its conceptualisation and practice changes across locations and time. HACs and HARs agreed that these varying socio-cultural constraints may justify why some regions may value creativity differently and why National teams and clubs exhibit diverse game interpretations, i.e. playing styles (Vaughan et al., 2019). GBC3 commented that:

> “There is something about North and South. For example, Brighton is a bubbly city, it’s multi-cultural, it’s fun and they want their football to be like that. If you are in the north-west (…) they are more like sort of organised (…) their values might be different. In Brighton they might want players to be imaginative, creative...in the North they might want them to be organised, disciplined, reliable...all the things that match the culture of the city and of the region (…). Creativity has got to have a cultural context.”

Furthermore, participants suggested that the conceptualisation and operationalisation of creativity in football have evolved in tandem with the metamorphosis of the game and society. In that vein, they alert that current, mainstream interpretations of football may be limiting creative expression, and are also responsible for the dearth of so-called ‘number 10’s’ – attacking midfielders which traditionally represented the pinnacle of creative expression in football teams:

> “Number 10s no longer exist. Probably that is related to the fact that teams are much more concerned with spaces in-between lines (…), there is not as much space as there used to be in the central zone. The number 10s are now

being transformed into wingers. Creativity changes, the type of creativity changes throughout time, everything is related to the Game". (PTS4)

However, while practitioners referred that there may be a lack of traditional attacking midfielders in contemporary football, the significant changes in the way the Game is played has meant that creativity is currently being embodied by other players acting in different zones of the pitch, like wingers, full-backs, and even goalkeepers. PTC4 explained that "a few years ago, the goalkeeper only did saves and now the first moment of attack starts with the goalkeeper (…). So now creativity must also be an option for the decision-making of the goalkeeper."

Simultaneously, HACs and HARs proposed that the development of creativity in youth football is tightly associated with the evolution of wider society, pointing for example to the impact of increasing scheduling, urbanisation, and digitalisation on the phenomenon. ITS2 recalled that:

> "We used to play football from morning to evening. We would play on the street, everywhere. That is no longer possible because social life has changed. There are no longer spaces, and this has not been replaced by schools. (…) If Neymar, instead of playing from morning to evening had been put in school 8 hours a day, perhaps he wouldn't be the player that he is nowadays."

Other than impacting imagination, practitioners' reported that changes in children's lifestyles have led to increased sedentariness and significantly affected motor skill competency. While one HAC mentioned that his club even had to implement a dance workshop to address this problem, ITS3 suggested that "nowadays they [young players] are better with their hands but at the level of eye-foot coordination, sensitivity...The contact with the ball has decreased and it is difficult to recreate that in a football school."

Finally, the widespread development of capitalism that led to the marketisation of many sectors of society – e.g. education (Tanggaard, 2014) -, appears to have also impacted football, with players being traded like commodities (Roderick, 2006). Vaughan and colleagues (2019) explained that "an over-emphasis on internal and external competition has led to corporate organizational structures and governance practices being applied to elite and grassroots sport" (p.10). Practitioners interviewed for this study acknowledged that by-products of a business-like approach to player development, like a focus

on productivity and efficiency, have a negative effect on creativity. GBC1 questioned:

> To what extent has football evolved that it will prevent us from seeing those players that have something mystical, something that fulfils our imagination? Because they took risks. If we added up the times they were unsuccessful...fortunately back then there were not so many statistics, otherwise they would say "So, this guy got the ball, turned 20 times and only scored once?". And maybe that goal he scored is the one people are still taking about 20 years on!"

In resume, practitioners' conceptualisations of creativity were largely aligned to those proposed by researchers, although with different priorities with regards to the most valuable criteria, i.e. practitioners prioritised functionality over originality. Given the complex, unpredictable nature of a team ball sport like association football, HACs and HARs have highlighted the connection between creativity and adaptability, proposing as well that creativity can emerge as a collective behaviour and in any phase of a game. Additionally, practitioners suggested that creativity is an ever-evolving construct that is tightly linked to the evolution of the game and wider society, being valued differently across clubs, regions, and countries, due to varying socio-cultural, geographical and historical characteristics.

Most practitioners agreed that phenomena of industrialisation, urbanisation and digitalisation have had a negative impact on motor skill development of young players and may endanger exploratory behaviour. Notwithstanding, while they considered that the dearth of 'number 10s' may be a consequence of a prioritisation of athletic development and statistical analysis over anticipating skills and intuitive decision-making, they have also explained that there are currently more opportunities for players in other positions, traditionally more conservative – e.g. goalkeepers, defenders - to be more creative.

6.4.2. Theme 2. Characteristics of 'highly creative' players

This overarching theme presents HACs and HARs' perspectives on the 'nature-nurture' elements of creativity in football, reflecting on the biological, geographical, and socio-cultural origins of players they perceive as highly creative. It also enumerates traits and skills that practitioners consider to be commonly found in so-called highly creative players, such as technical skill, game

understanding and self-confidence. Two higher-order themes have been defined – origins of 'highly creative' players and traits and skills of 'highly creative' players – which unfold into seven lower-order themes.

Table 3: Summary of higher and lower-order themes (Theme 2)

Higher-order theme	Lower-order themes
Origins of 'highly creative' players	Creativity is partly genetic
	Socio-cultural backgrounds
	Geographical origins
Traits and skills of 'highly creative' players	Irreverence and risk-taking
	Self-confidence and determination
	Game understanding
	Ability to execute

6.4.2.1. Origins of 'highly creative' players

6.4.2.1.1. Creativity is partly genetic

Based on years of accumulated practice working with hundreds of young players, participants unanimously suggested that there may be individuals born with higher football creative potential than others. PTS3 shared that:

> "Within our scouting department, we look at players that belong to different age groups. Looking at a player who is 5, 6, 7 years old – not one, but several – there are very different levels. And the stimuli that they have had up to that age may not have been very different. (…) If there is such a difference, I believe that they may have been born like that."

However, HACs and HARs also agreed that appropriate developmental contexts are primordial for player genetic potential to become fully expressed; an 'epigenetic' conceptualisation that is much in line with Gagné's (2005, 2008, 2013) DMGT and EMTD models of talent development. ITC2 believed that "Mother Nature provides a genetic gift and then it's about the inputs that value this baggage. The richest the baggage, the better a player can be". While recognising that some players have predispositions to be more creative than others, participants also alluded to the non-linearity of creative expression. For example, PTS4 suggested that the 'level of creativeness' of players can vary

across the developmental pathway: “Plenty of times those players that we identify at one stage as creative players, when we see them at the latter stages of development, they are not so creative anymore and no longer have those characteristics.”

6.4.2.1.2 Socio-cultural backgrounds

Although there is, to date, no clear evidence of a link between growing up in poverty and reaching expertise in football, HACs and HARs reported that the majority of so-called creative players that they had worked with tended to come from – albeit not exclusively - disfavoured economic backgrounds, where they enjoyed more freedom of expression and accumulated more unstructured practice than their peers:

> “That creative, irreverent player who does different things is more identified with those [socio-economical] difficulties because the player wants to overcome difficulties that he faces in his daily life. A player that is born on a ‘golden bed’ does not have such hunger, because he doesn’t need to put so much effort. I don’t mean that this is fixed, but the highest percentage [of ‘highly creative’ players] is related to disfavoured classes.” (PTC4)

Nonetheless, while recognising that players who face challenging socio-cultural environments may exhibit different characteristics from their peers, PTS3 casted doubt on a cause-effect connection between ‘struggle’ and creativity:

> “Coming from a less favourable social context, [spending] more time playing on the street...maybe I relate that more to the reaction to the loss of [ball] possession, [to a player] being more competitive, more aggressive, more intense. In relation to creativity itself, I don’t feel secure to reach that conclusion”. (PTS3)

HACs and HARs were unanimous in suggesting that creativity can be found more often in liberal contexts – countries, regions, clubs, home environment -, which, in their perspective, tend to attribute more value to creativity:

> “There is certainly a stigma. If you have a Brazilian kid your subconscious says ‘this boy could be creative’. I don’t think there is anything biological or chemical with any part of the nervous system, of the physical system, that says what that boy is going to be. However, I think that the systems that produce players are going to produce a certain type of player. So, in England it has always been quite a regimented process and is very formalised but

obviously if you go to some of the South American countries it's very free, very open, so there may be more opportunities for creative thinking because it's not stopped." (GBM2)

6.4.2.1.3. Geographical origins

A thorough review of available evidence on the developmental pathways of the World's top performers (Rees et al., 2016) reported that top athletes in the United Kingdom were more likely to grow up in small communities with less than 30,000 inhabitants. In line with such findings, Portuguese participants reported that players considered highly creative often came from rural environments. For example, PTC2 claimed that

"those players arriving here [at the academy] from rural areas are much better [than their peers]. Why? Because up to that age [in which they enter the club] they have acquired a number of skills and motor experiences that allowed them to be eclectic and reach a different level."

However, in Great Britain, a GBC2 explained that more than rural or urban settings, the key factor allowing for an early development of creative learning may be having a physical place available to play football informally, preferably in the company of friends or siblings:

"The typical one is kids from the inner city areas. They play the cage games, they would have found clever ways to beat their opponent...[more creative] kids [are those] that maybe have got a big backgarden and a few brothers or sisters and they are playing outside all the time."

6.4.2.2. Traits and skills of 'highly creative' players

This higher-order theme focuses on the traits and skills that HACs and HARs associated with those players commonly classified as highly creative. It comprises four lower-order themes: irreverence and risk-taking; self-confidence and determination; game understanding; and ability to execute.

6.4.2.2.1. Irreverence and risk-taking

Most HACs and HARs commented that highly creative players are usually those prone to taking risks, and unafraid to defy norms. This is in line with some theories that include risk-taking as an essential component of 'general' creativity (e.g. Amabile & Pratt, 2016). For example, PTS4 posited that "creativity is also interconnected with a strong personality, audacity, not being afraid of taking risks and doing something different in comparison to others."

Despite the consensus on the importance of risk-taking for creativity in football, some participants disagreed on the extent to which such irreverence transferred or not beyond the field of play. A number of HACs and HARs, such as GBC1, claimed that creative players are also different from the norm in their personal lives: “Usually creative players are a bit ‘off the wall’, they have a personality...they eat differently, they speak differently, they do things a bit differently.” Others, like GBC3, believed some characteristics suggested that may not be the case: “We have players who are very full of life and quite artistic off the pitch and then on the pitch they are not. So I am not sure that there is a definitive [creative] personality.”

6.4.2.2.2. Self-confidence and determination

Participants from all countries coincided in the importance of self-confidence and determination for creative behaviour, as it allows players to thrive under pressure, take risks and persist despite negative feedback from peers or other sporting agents (e.g. coaches, opponents, spectators):

> “You need to have self-belief, you need to have a vision (…), you’ve got to be determined in your actions and believe in what you are doing and you can’t be put off by what I call the ‘sappers’, those who want to sap your creativity out of you, because they are jealous or they can’t do it.” (GBC1)

Self-confidence has often been correlated with successful sporting performance (Hays, Thomas, Maynard, & Bawden, 2009). However, except for Martin and Cox’s (2016) life-positioning analysis of NBA ‘creative legend’ Steve Nash, who was described as possessing “unwavering self-confidence” (p.394), the potential association between self-confidence and sporting creativity remains under-explored in scholarly literature. This is in opposition to the field of general creativity, where self-confidence has been receiving growing interest (Karwowski, Lebuda, & Beghetto, 2019).

6.4.2.2.3. Game understanding

Game understanding refers to “a player’s ability to interpret tactical offensive and defensive problems by selecting appropriate solutions in different game situations based on justifiable arguments for these solutions” (Luhtanen, Väntinnen, Häyrinen, & Brown, 2002, p. 275). Having established functionality as the most important criteria for creativity, HACs and HARs, like GBS2, were unanimous on considering that “creative players generally are the ones with good

game understanding, a concept they also related with the notion of timing, i.e. doing the right thing in the right moment:

> "One thing is being creative in the sense of [the variability of] my motor repertoire, the decisions I make. Other thing is being able to apply the right things at the right time. And in football we have examples of players who are not always able to bring both together." (PTS2)

Such stance is in line with suggestions of the importance of domain-specific knowledge for creative expression (e.g. Barbot & Eff, 2019) and with Dietrich's (2019) claim that divergence *and* convergence are both essential components of creativity and should not be considered in isolation.

6.4.2.2.4. Ability to execute

Another interesting parallel found between academic debates (e.g. Kaufman & Sternberg, 2007; Runco, 2014) on creativity and the dialogues with practitioners regarded the importance of successful materialisation (see chapter 3 for a discussion of creativity *in* sport vs creativity *about* sport). GBS1 argued that:

> "A creative player is someone that is not only able to think of something different to do on the pitch but is actually able to do it [as well] (…) If you can see that they are able to do that, then I think they stand out".

Nonetheless, most interviewees highlighted that at least during the early stages of player development, 'creative intent' may be more valuable than successful execution:

> "It's about the player [development], not about the results, so it's around intent rather than execution, so if a player in any position has possession of the ball – what is their intent? Was there intent going towards being correct? Depending on what the age was, how complex the skill or decision making, or phase of play or scenario is...was their intent correct? Is their intent getting better?" (GBM2)

In summary, HACs and HARs were unanimous in agreeing that there is a varying genetic potential across young players that positions them in different places of a creativity continuum. However, they also contended that this genetic potential is a 'mere' starting point of a non-linear process which depends on adequate environments for its full expression. As such, practitioners identified liberal socio-cultural environments, which enable freedom of expression, as favourable for the creative development of young footballers. They also

highlighted the importance of opportunities for informal, children-led, unstructured practice, contending that the existence of nearby peer groups and/or siblings can be beneficial for creative development.

6.4.3. Theme 3. Fostering creativity

This overarching theme describes and discusses participants' beliefs regarding their perceived best strategies for creative development in youth players who integrate professional football academies, namely approaches to skill acquisition or the importance of competition and street football. It also highlights the importance of adults – especially coaches and significant others like parents – for children's creative expression, for example through the management of expectations. Additionally, this overarching theme identifies and reflects on HACs and HARs perspectives on how organisations such as clubs, national governing bodies (NGBs) and educational systems play a significant role on creating opportunities for creative development. Three higher-order themes have been defined – designing a curriculum for creativity; adult support; and institutional support -, comprising a total of 13 lower-order themes.

Table 4: Summary of higher and lower-order themes (Theme 3)

Higher order theme	Lower order themes
Designing a curriculum for creativity	The road to 'creative' skill acquisition: teaching or learning?
	The importance of tailor-made approaches
	Street football: a fundamental tool or an outdated concept?
	Competition: as essential as dangerous
	The potential of diversification
Adult support	Avoid over-structuring
	Emphasise the process, not the result
	Managing expectations
	Forming relationships
Institutional support	A shared culture of creativity
	Coach Education
	Excessive regulations
	More flexible education, more physical education

6.4.3.1. Designing a curriculum for creativity

6.4.3.1.1. The road to ‘creative’ skill acquisition: teaching or learning?

While in most other topics discussed during interviews the level of consensus was high, with regards to this theme there were clear divisions between practitioners in all countries. On the one hand, some Italian and British HACs and HARs claimed that a step-by-step approach to motor skill development is necessary, so that children can learn adequate technique via systematic progression before playing the game:

> “For many years we thought that everything should be done in game situations but (…) can I play a match if I don’t have a driving license? Before that I need to provide them with the elements. So, even analytical exercises, the shot, the control, the pass. It’s a progression. First without opponent, then I include the team-mates, then the opponents, then larger spaces.” (ITS2)

Such perspective is in line with Fitts and Posner’s (1967) model of learning phases, which posited that skill acquisition first requires cognitive activity during which the learner becomes familiar with the desired movement pattern. This stage is followed by an associative phase of subtle adjustments which, after extensive practice, will allegedly lead to effortless autonomy (Wulf, 2013).

On the other hand, some practitioners’ suggested that skill acquisition in football cannot be taught, but only learned. Thus, the coaches’ primary mission should be creating adequate environments that enable players to express their potential. PTC1 suggested that:

> “The linearity of any process, whatever it is, is something in which I don’t believe. It goes against the nature of human beings. (…) You won’t teach anyone how to play football; you don’t say ‘pass the ball here and do that’. No! But you create those contexts, where players can start creating and adjusting, finding their own way of existing and taking part in the game.” (PTC1)

This perspective is in line with calls for the adoption of constraints-led approaches (CLA) for promoting skill development and creative expression (e.g. Santos et al., 2016; Vaughan et al., 2019). Inspired by ecological dynamics and non-linear pedagogy, the CLA recognises the inseparability of perception, action, and intention and sees the coach taking up the role of environmental architect,

selecting and manipulating task constraints (Renshaw & Chow, 2018). Moreover, the CLA places an emphasis on representativeness of learning designs (Renshaw & Chow, 2018) and "the emergent co-ordination patterns may not fit the optimal movement solutions often reported as 'classical techniques' (…) but may be the best fit in terms of what the individual's intentions are at a specific point in time" (Renshaw et al., 2019, p.42).

6.4.3.1.2. The importance of tailor-made approaches

Interviewees also proposed that player development pathways should recognise and adapt to the uniqueness and specific needs of each individual. Thus, curricula and coaching strategies must be flexible if creative potential is to be fully expressed:

> "Everyone is different. So, for us, we are putting out a structure for the development of players which is the basic fundamental, but on top of that it's all about what you need. So you get what you need, this person gets what they need, they get what they need...don't get them fundamental movement skills if they don't need them just because it says in your box." (GBM2)

Such suggestion of the transferability of creative abilities between sporting and non-sporting domains is at the heart of Santos and colleagues' (2017) Skill4Genius project, which found that creative thinking could be successfully articulated with in-game creative performance.

6.4.3.1.3. Street football: a fundamental tool or an outdated concept?

Street football has been considered fundamental for the emergence of successful players (Uehara et al., 2018), with Lobo (2002, p.16) describing it as "the best football school in the World". Indeed, the perceived decline in creativity in football has often been associated with a steady decrease in informal play on the streets (Santos et al., 2016; Memmert, 2015). However, discussions surrounding street football sparked interesting debates among HACs and HARs. In some academies the disappearance of street football has led to attempts to replicating it within their grounds, as part of the training sessions of younger age groups:

> "The first 15 minutes of each training session up to under-12s is dedicated to street football. (…) Just like before, when kids played on the street, 3v3,

4v4, and the coach doesn't say anything, he is silent. The players make their own teams, small goals, they play at ease, decide on the fouls, play as they wish. (…) Before, [with street football] you kept learning automatically with your friends and with yourself by practising, practising, practising, without having someone always talking...we defend that and that is why we use the first training session of the week to help that creativity." (PTC4)

Despite the enthusiasm of some practitioners with the possibility of using their academy grounds as 'in vitro' environments for the replication of street football, other interviewees argued that such goal is difficult, if not impossible to fulfil. They explained that an essential element that made street football so successful was the intrinsic motivation of young players and the self-directed learning that is hard to promote in supervised environments like academies, even if coaches refrain from providing instructions:

"Street football implies that you want to compete. You have nothing to do, what you decide to do is to play football. So, you play football because you like it, because you love what you do. You are not drawing, you are not dating. And to play football you need your friends. The setting is not important. It has to do with the community that is created. Football needs others to develop. I will be as creative as you are. I will find things that I did not have depending on the problems you pose me. And recognising that makes street football exceptional...or made! Now, the kids go to academies at 4 or 5 years and they are not competing, because they are brought there [by their parents]. They don't turn up anymore carrying the ball under the arm. Recreating street football is artificial (…). We should stop talking about street football. There was a different culture that allowed that. If today there isn't, it makes no sense for us to keep looking behind." (PTC1)

6.4.3.1.4. Competition: as essential as dangerous

All interviewees agreed that competition plays an instrumental role in fostering creative development. In line with Vygotsky's (1978) notion of 'zone of proximal development', participants highlighted that competition is part of human nature, adding that they consider it essential for evolution:

> “Creativity, especially with the smaller ones [players], is competitiveness. Because I [want to] show that I am better than you, than my opponent, than my team-mate (…). All of us, human beings, when we play a game, we want to be competitive; we want to be on top. But it shouldn’t be only about that (…) or we end up blocking the learning process.” (ITC1)

Albeit unanimous in endorsing competition as beneficial for creative development, HACs and HARs argued that its exaggerated use can be nefarious. Such perspective is in line with Vaughan and colleagues’ stance (2019) that an over-emphasis on competition in sporting and non-sporting contexts may have a negative impact on players’ psychological well-being, creativeness, and learning. For example, ITC1 commented that “stressing competitiveness too much blocks the learning process. So it’s a very fragile balance”.

Having recognised the potential benefits and pitfalls of competition regarding creative development, the vast majority of practitioners suggested that the interference of adults – i.e. coaches and parents - and their obsession with performance outcomes represent the main sources of unhealthy competitive environments, even at the lower age groups:

> “Competition is important (…), but it’s got to be managed appropriately. (…) At times, the competition [is] too important for the coach to win, so that the coach gets the medal rather than the kids. (…) Kids love competition, so if you can play with competition and take the adults out of it, then I think it’s alright.” (GBC2)

Thus, practitioners could accept Rasmussen and colleagues’ (2017) suggestion to treat competition, just like creativity, as a developmental resource instead of an end in itself.

6.4.3.1.5 The potential of diversification

A growing number of researchers investigating sporting creativity have made the case for the existence of skill transferability across sports (e.g. Santos et al., 2016), namely team invasion and racket games (e.g. Memmert, 2015). In the same vein, HACs and HARs agreed that players who experience multiple sports may improve their technical and tactical skills:

> “We had a [currently professional] player who until a certain moment played roller hockey and football, he would play both sports. And even jokingly we would say that much of his body movements when trying to

deceive opponents [in football] had been developed playing roller hockey." (PTC3)

One of the main risks often associated with the practice of a single sport, i.e. early specialisation, is burnout and consequent withdrawal from sport. (DiFiori et al, 2014) However, a significant correlation is yet to be established, with DiFiori and colleagues (2014) indicating that "there appears to be more of a psychological component related to burnout and attrition with adult supervised activities" (p.2). HACs and HARs reported that in their experiences, sport diversification appears to be beneficial for young players' well-being, both psychologically and socially. Some academies developed several initiatives aimed at allowing children to interact with other sports and players from other – sometimes even rival - clubs:

> "If you start playing football at 9, if you [become] an elite player you will probably find out 10 years later whether you are good enough, so I think that you need to keep in love with the Game. If you do only one thing, I am not sure that's very helpful, hygienic, with your development." (GBM2)

6.4.3.2. Adult support

Adults are key figures for children's engagement with sport, with coaches and parents playing the most important roles (Côté, 1999). If the effectiveness of the coach-athlete relationship has been recognised as instrumental for the success of the developmental process (Mageau & Vallerand, 2003; Jowett, 2017), parents are also essential to enable children participation in sport (Côté, 1999; Holt et al., 2009). Nonetheless, Knight and Newport (2020, p.123) explain that "effective sport parenting is far more complex and intricate than simply providing tangible and emotional support" to their children. This is because parents face multiple stressors, as a result of having to help their children navigate between sporting, school, and family commitments, while simultaneously bearing financial and emotional costs and disruptions to their own personal and professional duties (Harwood, Drew, & Knight, 2010). This higher-order theme comprises four lower-order themes: avoiding over-structuring; emphasise the process, not the result; managing expectations; and forming relationships.

6.4.3.2.1. Avoid over-structuring

In 2007, Memmert suggested that coach or teacher instructions to players, especially if close-ended, could limit players' ability to perceive unexpected stimuli in the environment - a phenomenon termed 'inattentional blindness' - and

thus affect creative affordances. Similarly, HACs and HARs considered that the perceived decline of creative behaviour is closely related to adults (i.e. coaches, parents, teachers) over-instructing young players and instilling risk-avoidance, coupled with an excessive emphasis placed on tactical systems and performance analysis from early ages:

> "Today the level of players is more homogeneous, because all of them start playing under the orientation of adults. (…) Very good players may also have their creativity stifled because for many seasons they hear 'play one touch, play two touches only, play with your colleague, pass the ball'. There are maybe fewer bad players, but also fewer very good ones." (PTS3)

6.4.3.2.2. Emphasise the process, not the result

In addition to excessive instruction, participants were also unanimous in suggesting that an excessive focus on immediate outcomes – i.e. winning, especially during youth development, may have a negative impact on creativity. Interestingly, many HACs and HARs explained that they often came across two different sources of adult pressure: on the one hand, parents who are obsessed with their children's achievement from very early ages; on the other, coaches whose perception of job insecurity leads them to prioritise winning over long-term development:

> "Coaches want to win because they may think that their job is on the line (…) and we have had it here (…), it's all about winning. Sometimes they put the pressure on themselves, I think that they may think 'I'm winning and he's [a colleague within the same club] not, so I must be a better coach than him if I am winning more than him." (GBS1)
>
> "Often you find parents that are all about winning. Their son is 7 and all they are interested in is winning and not the fact that their son...football is so much more. Football is about creating friends and having fun, staying fit and healthy lifestyles." (GBS2)

Such behaviours are contrary to suggestions that intrinsic motivation (Hennessey, 2019) and task-orientation (Memmert, 2015) are important for creative development. Indeed, in the neighbouring field of talent development, Gledhill, Harwood and Forsdyke (2017) alert for the importance of creating "a parenting climate that fosters task orientation" (p.107). With regards to coaches, it becomes evident that self-imposed pressure and job precariousness may have a nefarious

‘cascade’ effect on their ability to foster creative expression, highlighting once again the importance of organisational factors.

6.4.3.2.3. Managing expectations

In line with the recognition that self-confidence is important for creative expression, HACs and HARs, like PTC1, reported that it is part of coaches and parents’ remit to instil self-belief in young players, accepting mistakes, and encouraging them to take risks and challenge expectations: “The coach must encourage his own players to create things, to self-stimulate, to find challenges, to go beyond the limits, to try something that they have never tried.”

Moreover, participants suggested that parents who give their children freedom and prioritise enjoyment over results, contribute importantly for creative development:

> “[The parents of highly creative players] give much more freedom to the kids. A parent that is very rigorous, very demanding, that does not promote social relationships of differentiated contexts and experiences for his kid, usually will not contribute as much for the development of those skills in his children.” (PTS2)

Another aspect discussed by HACs and HARs relates to the potential, unintended negative consequences of parental over-excitement with young players’ performances, which interviewees believe have been amplified by social media. Moreover, participants reported that some parents invest heavily in unnecessary material resources, which may result in increased pressure to perform:

> “We’ve got a 7 year-old boy who...I think his parents put a tweet out of him keeping the ball up 75 times (…). All of a sudden you get other people saying “he needs to go to Manchester United, he needs to go to Manchester City, oh, they are interested’...just because someone has tweeted this thing, they are all saying ‘he is the next this, he is the next that’!” (GBS2)

6.4.3.2.4. Forming relationships

Deci and Ryan’s (1985) self-determination theory highlighted the benefits of autonomy-supportive contexts for human health and optimal functioning (Carpentier & Mageau, 2013). Coaches’ beliefs, values, and interpersonal style are decisive for the motivational climate and development of young athletes (Conroy & Coatsworth, 2007; Carpentier & Mageau, 2013). While controlling coaches commonly pressure their athletes into pre-determined, externally

controlled ways of thinking, acting, and feeling (Deci & Ryan, 2000), autonomy-supportive coaches usually recognise the uniqueness of each individual and are willing to "provide a rationale for tasks, inquire about and acknowledge athletes' feelings, provide choice in training, allow athletes to take the initiative and work independently, and create a noncontrolling environment" (Cronin & Allen, 2015, p.63). In that vein, participants unanimously highlighted the importance of coach-athlete relationships for creative development. They suggested that coaches – and also parents - should strive to become positive influences in young players' lives even beyond the field of play and practice environments, caring for and about them and encouraging the development of their potential:

> "Relationships are fundamental in the youth sector. (…) Learning is also achieved through the relationship that you created with the boy, understanding what his problems area, how you can help him (…). Each boy is an individual, singular, unique, so the coach must be good in welcoming that uniqueness." (ITC1)

6.4.3.3. Institutional support

Participants contended that while coaches are central to the development of creativity, their agency is not unlimited, depending on how organisational culture values – or not – creativity. Indeed, researchers have been devoting an increasing interest to organisational creativity and innovation in sport (e.g. Smith & Green, 2020; Paek, Martyn, Oja, Kim & Larkins, 2020). Thus, this higher-order theme relates to the perceptions of practitioners regarding the influence of organisational environment and policies on the development of sporting creativity. It is divided in four lower-order themes: a shared culture of creativity; coach education; excessive regulations; and more flexible education, more physical education.

6.4.3.3.1. A shared culture of creativity

HACs and HARs highlighted the importance of meta-creativity, arguing that if clubs want more creative players, then their organisational culture should embody creativity as a key, orienting value – creativity as a means instead of a goal (Rasmussen et al., 2017) -, present on a daily basis and shared by all elements composing the club's structure:

> "You have to create that culture and it's not just one coach. It has to be the whole building [which] has to have that culture (…) to be able to create.

That freedom to be able to go and try stuff...and if it doesn't work, it doesn't work." (GBS2)

Simultaneously, practitioners referred that for such culture of creativity and risk-taking to be effectively put in place, organisations should guarantee appropriate working conditions to their staff, namely through adequate resources across all age groups/developmental phases (e.g. fair salaries and long-term contracts).

6.4.3.3.2. Coach Education

Interviewees perceived current coach education models as challenges for creative development. They deemed the existing coaching licenses as too focused on technical and tactical content, and suggested that youth coaches would benefit more from possessing teaching qualifications instead:

"I would change the qualification structure. You don't need to have a UEFA B license to work [with players] between 9 and 12. You need a teaching qualification. You need to be a great facilitator, differentiator between players. You need to have an unbelievable good knowledge of games and practices that can provide the boys with opportunities to be in possession and practice creative things (…). If you want to be a coach within under-18s and upwards, there is some technical information that you need to have and that's when you need an [UEFA] A license or a B license." (GBM2)

Furthermore, a HAC in Portugal claimed that existing coach education hinders the creative thinking of coaches themselves, which may then influence negatively the creative development of players via a 'cascade effect'. Such perspective is aligned with Piggott's (2012) suggestion that the existing model of coach education "is one of standardised curricula presenting a 'tool box' of professional knowledge and a 'gold standard' model coach which learners are expected to mimic" (p.539):

"[In our academy] we are trying to avoid formatting kids, because coaches are also taught to format, and we need to preserve the freedom of the athlete. There is a window of opportunity for these players, but it is getting narrower because coaching courses are increasingly formatting [coaches]." (PTC4)

6.4.3.3.3. Excessive regulations

Some participants, namely in Italy and Great Britain, perceived that there is an excessive level of regulations in youth sport – spanning from health and safety to the establishment of age limits for competitions -, which they believe may contribute to a decline in creativity:

> “When you went to the street [in the past] would you ask [another player] ‘how old are you?’. You wouldn’t! The big one played, the small one played. Now we must evaluate the players considering if they are born in 2003, 2002, 2001. You shouldn’t play like that. We, the adults, are the ones creating the platforms. We, the adults, create the limits. It is hard to find the best path for them, because there are regulations that limit this.” (ITS3)

Therefore, interviewees claimed that NGBs should launch reviews of their current policies and regulations to allow clubs more flexibility in terms of the design of individual development plans that can better cater for the needs and characteristics of each child.

6.4.3.3.4. More flexible education, more physical education

In Tanggaard’s (2014) situated model of creative learning, the scholar highlights the importance of inquiry learning, adding that it would be “more useful to cultivate a desire among students to approach new assignments from a more experimental perspective” (p. 113). In a similar vein, GBM2 suggested that the creative development of young players depended not only on changes within academies, but also in the wider schooling system: “I would change the schooling system to allow more freedom and more principle-led stuff.”

Furthermore, having reported their concern with a perceived increase of sedentariness levels of children, coupled with a decline in street sport and motor literacy, HACs and HARs suggested that schools should take more responsibility for promoting physical education. In that sense, a HAR in Italy proposed a significant increase in the amount of time dedicated to physical activity in educational settings, that should be delivered by certified teachers:

> “[In Italy] our children up to 10 [years] don’t do sporting activity (…). There is no Physical Education teacher with a degree in sport. My daughter is in school from 8.20 to 16.20. In the afternoon, they do the homework. They could do physical activity, motor, coordinative [skills, because] the kids leave school and cannot play on the street.” (ITS2)

In resume, participants proposed that creative development is not exclusively intra-individual but a complex, long-term process that involves the contributions of many agents at different levels, such as coaches, families, and wider organisations like NGBs and governments. HACs and HARs posited that schooling methods, physical activity provision, and sport-related policies and

regulations can have a significant impact on the development of creative potential. Thus, they suggested that creativity should be seen as a key value in every organisational culture. In terms of proposed strategies and curricula for fostering creativity across developmental pathways in academy football, once again practitioners' perspectives largely mirrored researchers' recommendations, e.g. diversification, need for individualised approaches, a balanced used of competition.

This overarching theme also exposed the greatest debates between participants, especially in what concerns the (un)usefulness of street football and processes of skill acquisition – with some proposing that 'basics' must be initially taught to children and others advocating for a constraints-led approach focused on environmental design. HACs and HARs aligned with literature recommendations regarding the importance of task-orientation and player-led activities for creative development. Simultaneously, practitioners suggested that adults are instrumental to help children managing expectations relative to a prospective future in professional sport. Nonetheless, participants also claimed that coaches and parents are often the biggest obstacles to healthy participation in sport and exploratory behaviour. Thus, they should put more emphasis on forming caring relationships with young athletes..

6.5. Discussion

The purpose of this study was to explore perceptions of football creativity among HACs and HARs in three different countries. Additionally, it aimed to compare these with existing research on the topic. Doing so was important given that little is still known about the complex, multi-faceted phenomenon of creativity in football, with most knowledge to date being academically-driven and lab-based (Fardilha & Allen, 2019). This study answers recent calls for more integrative, participatory research that can increase 'real-world' applicability (e.g. Montuori, 2019). Furthermore, it adds to existing knowledge within elite youth football (FIFA, n.d.) by identifying and discussing perspectives and beliefs of senior figures responsible for coaching and recruitment in 10 European football academies. These institutions are usually difficult to access by researchers given the traditionally closed nature of professional clubs, suspicious of outsiders (Morrow & Howieson, 2014) .

Despite originating from different countries and clubs, the discourses and beliefs of participants suggest a largely shared vision regarding creativity in football. Moreover, this vision is generally aligned with conceptualisations of creativity proposed earlier in the academic literature, with commonly used criteria for its evaluation – originality and adequateness – being accepted by practitioners, who simultaneously agreed with Simonton's (2012) suggestion of adding surprise as a third meaningful criterion. However, while most research on sporting creativity to date has primarily focused on originality, i.e. the ability to perform/think of the highest possible number of different solutions for a given problem (Guilford, 1967), HACs and HARs gave more emphasis to adequateness/functionality. Based on their perspectives, it could be posited that the evaluation of creativity in football should be considered multidimensionally, relying on the conjugation of four main pillars:

a) 'what', i.e. the type of action/technical gesture;

b) 'where', i.e. the area of the pitch where the action is performed and/or the conditions of the pitch (e.g. type of surface, meteorological impact);

c) 'when', i.e. the moment of the game in which the action is performed (e.g. phase of play and/or chronological moment of the match);

d) 'who', i.e. the type/position of the player performing the action (e.g. goalkeeper, winger);

A fifth, global pillar – 'why' – could be added, to account for the specificities of the socio-cultural context in which the player and her/his team are inserted and its potential impact on creativity.

It becomes thus evident that being creative in football is not only about performing an unusual, statistically rare technical gesture *per se*. Instead, it can be about trying an action that is overall statistically common in the attacking phase, but not in the defensive. For example, a body feint performed by a defender in an attempt to condition an attacker's decision-making ability when the latter is in possession of the ball. Furthermore, practitioners were unanimous in recognising the constraining role of team-mates and opponents, which players must consider when making decisions in complex, unpredictable invasion games like football, as suggested by Aggerholm and colleagues (2011). Therefore, HACs and HARs' conceptualisations of creativity in football support Orth et al.'s (2017) association between motor creativity and adaptability.

Given the apparent importance of contextual variables for creativity in football highlighted by the majority of HACs and HARs, it becomes clear that the usefulness of pre-determined, standardised tests for the assessment of creativity in sport (e.g. Memmert & Roth's (2003) game-test situations, Moraru and colleagues' (2016) divergent doing) may be limited. This is because they only capture time-bounded 'snippets' of performance in a limited number of contexts which fail to replicate the complexity and unpredictability inherent to a team ball sport like football. If the assessment of sporting creativity is deemed important by scholars and practitioners, it should become more ecologically valid. Some steps towards this direction have already been taken with the development of game observations using performance analysis and machine learning software (e.g. Memmert, 2015). Nonetheless, it is important that these methods remain flexible enough to account for the impact of variable national/regional/club norms (Sternberg, 2019) on evaluative processes too.

Although not consensual among participants, the vast majority supported the adoption of training methodologies that can account for the expression of individual characteristics and cater for the varying needs of young players who despite being on the same team may be at different stages of development. Consequently, a constraints-led approach (CLA) may be beneficial for creative development, as proposed by Vaughan and colleagues (2019). The CLA considers skill acquisition as an evolutionary process (Renshaw et al., 2019), where perception, action and cognition are coupled (Hristovski, Davids, Passos, & Araújo, 2012). Furthermore, the CLA indicates that player actions increase in economy and stability over time, following non-linear pathways. Thus, exploratory activities are essential for children to find meaningful affordances (Vaughan et al., 2019), so "youth coaches should remember that children are not mini-adults but they are at varying stages of development and maturation which constrains their behaviours" (Renshaw et al., 2019, p.42). Coaches – and teachers – should take up the role of environmental designers, allowing for learners to self-organise "without the need for executive micro-management of each [system] component" (2019, p. 13).

On a different note, HACs and HARs recognised that creativity is a plastic construct which evolves in tandem with the metamorphosis of the game across time. Thus, while they admit that there may be less time and space for traditional

attacking midfielders to exhibit their creative abilities, there may also be more opportunities for creative expression in other positions not traditionally associated with the phenomenon. Participants contended that pre-conceived ideas related to potential for creative expression on certain roles that have also been conveyed in the academic milieu, e.g. that creativity can only occur on the attacking phase (Memmert, Baker, & Bertsch, 2010), should be avoided. Otherwise, like with the relative-age (RAE) or birth effect, where players who are born earlier in the year and who mature faster may benefit from enhanced training and selection opportunities (Sarmento et al., 2018), if defenders are led to refrain from exploratory behaviour and risk-taking across the developmental pathway, their traditionally perceived lack of creativity may become a self-fulfilling prophecy.

The present study also indicated unanimity among practitioners regarding the interdependent relation between genetic and environmental factors for creative development, which once again mirrors research conducted on talent development (e.g. Weissensteiner, 2017; Simonton, 2017; Schorer et al., 2017) and football. Indeed, HACs and HARs contended that there may be a certain genetic potential for creativity in football, which positions children at different starting points across a continuum. A recent systematic review (McAuley et al., 2020) reported a growing interest in genetic association research in football in the last four years. 103 genes have hitherto been associated with football performance but McAuley and colleagues (2020) advise a cautious interpretation of such findings, since most research has focused on two genes – ACTN3 and ACE – and presented important methodological inconsistencies (e.g. not accounting for ethnicity or positional differences).

With regards to creativity in sport, Arslan and colleagues (2016) hypothesized that it could be associated with neuregulin NRG1. However, single-gene associations with sporting creativity – which is also frequent in so-called general creativity – may be “vain causes” (Barbot & Eff, 2019), as they tend to ignore that the multidimensional nature of the construct requires elaborate phenotypes to which multiple genes contribute. These depend as well on a wide range of environmental influences for their expression (Zabelina et al., 2016) - an ‘epigenetic side’ - as showed in this study. For example, HACs and HARs suggested that players who grew up within autonomy-supportive, liberal families, preferentially with siblings or close friends who shared the same interest in

football usually displayed higher levels of creative expression. They also explained that geographical locations and socio-cultural backgrounds with frequent opportunities for informal, unstructured, player-led activities could lead to more effective creative development.

Thus, the importance of children benefiting from autonomy-supportive climates in sporting and non-sporting domains was made clear not only for the development of exploratory behaviour *per se* but also of related psychological traits and skills, like risk-taking and self-confidence. Within the sporting domain, coaches could follow Cronin and Allen's (2015) recommendations of "listening to their athletes, fostering athletes' independence, and providing choice within the training environment [as well as] provide athletes with opportunities to develop their personal and social skills, cognitive skills, goal setting, and initiative." (p. 69)

To date, most research on creativity in sport has focused on the individual level and on training methodologies that can foster its development (Fardilha & Allen, 2019). The findings discussed above support this to some extent – or at least show consistency. That is, the participants recognised the individual 'level' and immediate psycho-social environmental level of creativity. However, by adopting an integrative transdisciplinary (Montuori, 2019) lens and exploring beyond the individual ('I-paradigm') findings also demonstrate complex, situated nature of creativity, which is in line with Vaughan and colleagues' characterisation of sporting creativity as a "multifaceted wicked problem" (2019, p.1).

HACs and HARs perceived that societal evolution, characterised by processes of globalisation, urbanisation and digitalisation, together with decreasing opportunities for physical education in schools and restrictive organisational regulations in sport, have all played an important role in the perceived homogenisation of young players, the increase of sedentariness and the decline in creative behaviour in football. This may be problematic, given the importance of the development of cortical representations - e.g. of the feet in football (Silva, 2008; Maciel, 2011) - for sport-specific structural adaptations across time (Meier, Topka, & Hänggi, 2016),

The replacement of informal, unstructured practice, usually intrinsically motivated – i.e. street football - with organised and highly regulated football schools and professional academies, where players can be registered from early

ages (EPPP, 2011) and go through systematic evaluations for progression which privilege physical factors (Baker et al., 2017), may have also contributed to the declared lack of diversity.

6.6. Conclusion

Fostering creativity in football is highly complex and requires a global understanding of many interlinked factors that impact on it. In that sense, the adoption of a 'We-paradigm' (Glăveanu, 2010a) is not only recommended but necessary. While intra-individual traits and skills and training methodologies related to sporting creativity have deserved much attention for the past two decades (Fardilha & Allen, 2019) and are largely corroborated by the HACs and HARs interviewed, this study has also shown that creativity (at least in the view of the participants) is situated, influenced by surrounding socio-cultural contexts. Nonetheless, there is still much to explore with regards to the impact of wider sporting and non-sporting environments on creative development in football, like academy structures and cultures, parenting, and schooling. Doing so is important to fulfil Montuori's (2019) recommendation of 'weaving together' knowledge from different areas, agents, and levels of analysis, if we are to increase our understanding of creativity.

Chapter Seven: Challenges and opportunities for creative development in youth professional football organisations - a case-study of a Portuguese elite academy

7.1. Introduction

The widely recognised importance of creativity for sport – and especially for team invasion and racket sports (Memmert, 2015), together with its perceived decline over the last few decades (Santos et al., 2016) means that, in accordance to the law of supply and demand (Gale, 1955), the value of creativity is currently at a prime (Memmert, 2015). Thus, it can be argued that clubs who succeed in fostering more creative players are likely to reap significant financial rewards from it. Creative development is nonetheless complex and the multidimensional nature of the construct (Montuori & Donnelly, 2016) makes it hard to study.

To date, most studies on sporting creativity have focused on the individual level (Fardilha & Allen, 2019), with scholars identifying correlates of sporting creativity - e.g. attention, expertise - and proposing and evaluating training methods and programmes to foster it, i.e., best practice recommendations (see chapter 3 for a review). However, there have been recent calls for (e.g. Vaughan et al., 2019: Rasmussen et al., 2020a; 2020b) for further research that recognises environmental influences and the impact of socio-cultural constraints on the emergence of creativity. Indeed, Rasmussen and colleagues (2020b) warned that real world challenges arise may arise during attempts to implement so-called best practices, e.g. organisational culture and lack of stakeholder 'buy in'.

In study 1 (see chapter 6), HACs and HARs provided not only valuable insights with regards to the conceptualisation and assessment of creativity in association football, but also identified several factors that may influence creative development in professional academies, e.g. parental behaviour, result-orientation, early professionalisation, job insecurity of staff, structure of competitions, socio-cultural and geographical background of young players, (lack of) provision of physical education classes in schools,. These may have little to do with the design or delivery of training drills, but can equally impact creative development.

However, interactions between stakeholders identified in study 1 as key for the development of creativity in football academies – e.g. players, coaches, parents, academy leaders - remain under-theorised. Therefore, the present study employed Tanggaard's (2014) situated model of creative learning as an orienting framework to examine the challenges and opportunities for developing sporting creativity in a Portuguese professional football academy.

7.2. The situated model of creative learning

Similarly to what has been occurring with professional football, including at its youth level (Morrow & Howieson, 2014; Christensen & Sørensen, 2009; Relvas et al., 2010), Tanggaard (2014) suggests that the educational system has been influenced by growing marketisation. Moreover, she contends that researchers have focused on studying the possible links between teaching and creativity, treating learning "as a secondary concept" (Tanggaard, 2014, p.107). The same thought could be applied to existing research on sporting creativity, which has largely focused on developing programmes and enhancing methods for teaching/coaching creativity. Players' learning has deserved less attention, as if it would automatically emerge from these other developments. Cheung (2012) suggested that to promote creativity in the classroom there must be a focus on the meaning of creativity for teachers and how their practices may improve creative expression. In this thesis I have followed his reasoning, by exploring HACs and HARs perceptions of creativity in football and reflecting on their suggestions for its enhancement (see chapter 6).

In turn, while Tanggaard (2014) recognises value in Cheung's approach, she posits that more importance should be paid to "what kind of learning is vital and how learning processes actually lead to more creativity" (p.108). Following a situated, pragmatist approach, inspired by the earlier work of Joas (1996) on creativity as human action and Lave (1999) and colleagues' (Lave & Wenger, 1991) on learning, Tanggaard (2014) contends that:

> "human cognition is based on inquiry, on the creative potentials of human beings in a world of constant change which we try to understand, control, handle or change. This is why creativity is part of life in itself and not something reserved for unique individuals" (p.109).

This conceptualisation is in line with recent suggestions that sporting creativity should be framed as a developmental resource (Rasmussen et al., 2019), essential for the fulfilling of human potential (Vaughan et al., 2019). Moreover, Tanggaard's proposal of a situated model of creative learning results from her work with apprentices in vocational schools (e.g. Tanggaard, 2007; 2008). Football academies are themselves *milieux* of apprenticeship (Cushion & Jones, 2006), where young players are socialised (Christensen & Sørensen, 2009) and submitted to intensive training in the hope of becoming full-time professionals

(Brown & Potrac, 2009). Even if that means dismissing - or being pressured to dismiss - traditional educational opportunities (Christensen, 2009).

The situated model of creative learning (Tanggaard, 2014) is composed by three interdependent principles: (1) immersion in the topic of interest, traditions and in the subject matter; (2) experimentation and inquiry learning; and (3) resistance from the material of interest. With regards to the first principle – immersion – Tanggaard (2014) draws from Guilford (1950) and Ericsson and colleagues (1993) to argue that creative learning requires in-depth, domain-specific knowledge. It can be acquired through reasonable amounts of practice with adequate recovery, preferentially supported by experts and/or role-models: "it is when we know something about what we do that we are best able to handle the challenges confronting us, as long as this knowledge is not a barrier in relation to thinking and doing something new" (Tanggaard, 2014, p.110). This is in line with several suggestions of the importance of expertise for creative development in sport (e.g. Memmert et al., 2010; Richard et al., 2017).

The second principle – experimentation and inquiry learning - mirrors Tanggaard's (2008) own experience observing apprentices in vocational schools, and concours with previous research that emphasized the importance of play (e.g. Russ, 2016; Howard-Jones, Taylor & Sutton, 2002), peer-learning (e.g. Peters, 2010), and other unstructured, self-directed activities (e.g. Memmert & Roth, 2007) for the creative development of children and young people. Interestingly, Tanggaard (2008) found that breaks and moonlighting – i.e. work done outside prescribed school teaching time – represented important moments of freedom, curiosity, and exploration. This led her to argue, more recently, that "creativity consists of relating curiously to situations that demand we respond in new ways" (2014, p.111). A similar perspective has been adopted by researchers advocating for the potential of constraints-led approaches to the development of sporting creativity (e.g. Torrents et al., 2016; Santos et al., 2016; Vaughan et al., 2019), in which the coach becomes an environmental architect (Renshaw et al., 2019) responsible for promoting exploratory behaviour. However, little is still known about 'moments of freedom' within or beyond the training grounds or their contributions to sporting creativity development.

Finally, with the third principle – resistance from the material of interest – Tanggaard (2014) draws inspiration from Ingold and Hallam (2007) to suggest that the indivisible relation between humans and their surroundings leads to creative affordances. On the one hand, we can use materials (e.g. stones, sand, pencils, computers) to shape creations; on the other, materials (e.g. landscapes, buildings) also shape our daily life and hence impact our opportunities for creation. In that vein, Tanggaard, Laursen, and Szulevicz (2016) have demonstrated how different ball materials can lead to new affordances for creativity in handball. Furthermore, unlike romantic conceptualisations of creativity, Tanggaard (2014) proposes that "the experience of being lost, of being disoriented, of being held back, or simply of being frustrated can prompt a creative opportunity to arise" (p.111), something that sporting creativity researchers have not yet examined.

While originally inspired by vocational learning environments, Tanggaard (2014) explains that the situated model of creative learning is malleable, i.e. it "can take different forms according to particular settings and social practices" (2014, p.108). It presents a useful way to examine and develop our understanding of creative development within football academies because it proposes general principles/concepts for creative learning – "the basic ingredients of a learning community" (p.108) –, instead of a close-ended, prescriptive approach. Furthermore, it is appropriate for multi-level analyses, allowing for a better examination of the interactions between different key stakeholders involved with professional sporting organisations dedicated to player development (football academies). In resume, Tanggaard's (2014) situated model provides an adequate framework for examining this complex phenomenon. Therefore, the purpose of this study was to investigate challenges and opportunities for creative development in a Portuguese professional football academy, both *strictu* - i.e. within the academy building and related competitive settings - and *lato sensu*, i.e. considering how important stakeholders in young players' lives, e.g. parents, may affect creative development.

7.3. Method

Conceptualisations of creativity as situated emphasise the importance of contextualisation for a better understanding of the phenomenon. Indeed, a recent manifesto on creativity research incentivised scholars to move "beyond focusing

on the individual alone, isolated from his/her social, material, and cultural context" (Glăveanu et al., 2018, p.4). Therefore, more qualitative, exploratory approaches (Glăveanu et al., 2018), characterised by flexible designs (Rasmussen et al., 2020b) that celebrate detours (Tanggaard, 2018) and openly embrace the messiness and human nature of the research process (Meier, Wegener, & Maslo, 2018) are needed to further our understanding of creativity in sport and in football more specifically. In other words, there is room (and a need) for more creativity within creativity research. Case study research is one suitable approach for the current interest in creativity development in a football academy and its surroundings.

7.3.1. Case-studies and creativity research

Case-studies are "in-depth contextual analyses of one or a few instances of a naturalistic phenomenon" (Tracy, 2019, p.61). Albeit infrequently used in creativity research when compared to experimental approaches, case-studies, and in particular those focused on depicting the lives of eminent people, have resulted in some of the most cited research publications in the field – e.g. Gruber and Barrett (1974), Csikszentmihalyi (1996). With regards to sporting creativity, the use of case study designs is also limited. However, in recent years there have been signs of change, with Martin and Cox's (2016) life-positioning analysis of Steve Nash, and Harrison's (2016) autobiographical examination. While Harrison's (2016) work provided an opportunity for reflection on the potential of having multiple interests (e.g. sport and jazz) for creative transferability, Nash's LPA (Martin & Cox, 2016) provided an important glimpse into what could be called 'distributed genius'. They showed how the NBA basketball legend did not rely solely on his persistent commitment to improvement and technical skills, but was also shaped by the interactions with others, e.g. father, brother, coaches, friends, and teammates. Nonetheless, in contrast to the field of talent development where case studies have been used to good effect (e.g. Henriksen et al., 2010, 2014; Larsen et al., 2013) there are still no case-studies of sporting creativity examining the interactions between different stakeholders beyond the individual level. Addressing this gap is important, as groups and organisations may constrain or facilitate creativity, for example due to issues with hierarchical structures and communicational flows (Sobrinho, 2019).

Case-studies designs dovetail nicely with the study of creativity considered from the 'We-paradigm' (see chapter 2). Indeed, one of the key characteristics of case studies is their boundedness, i.e. a delimitation of time, place, and membership (Hodge & Sharp, 2016), which mirrors conceptualisations of situated creativity (Lebuda & Glăveanu, 2019) and may better represent its dynamic nature (Corazza, 2016; Tanggaard, 2019). Due to their boundedness, case-study designs do not aim for strict generalisability of findings. Nonetheless, in instrumental designs, the cases "are examined for their potential to enhance understanding of an issue or phenomenon. The case *per se* is less emphasized than the theoretical insight it might offer for a construct or concept" (MacQuarrie, 2009, p.442). Additionally, Glăveanu and colleagues (2019, p.3) argue that "cultural patterns as well as individual regularities in creative expression do allow us to construct models that are transferable to different domains of creative action and to different contexts". Thus, although the situated, contextual nature of this exploration may consequently limit the generalisability of its findings, it will hopefully contribute toward a better understanding of the complexity inherent to creative development in hybrid organisations like professional football academies, and of the potential of Tanggaard's (2014) model for its examination.

7.3.2. Contextualisation

7.3.2.1. Football in Portugal

Portugal is a peripheral European country where football plays a central role in daily life, and boosts national identity and self-esteem, in contrast with other social-economic indicators. Despite recent signs of recovery from a serious economic crisis which led the Portuguese government to request a bailout with the International Monetary Fund (IMF) in 2011, the country had a gross debt of 121.5% of its GDP in 2018 (Pordata, 2021) and still trailed behind its EU counterparts in many areas, e.g. education, employment, productivity. In contrast, Portuguese football players, coaches, clubs, and National teams are widely recognised as some of the best in the World, collecting several international titles – e.g. 4 European/Champions League club trophies, 2 Intercontinental Cups, the 2016 European Championship. At the youth level, the Portuguese National team has achieved several honours, winning the European Championship 9 times and

the under-20 FIFA World Cup in 1989 and 1991. Additionally, FC Porto won the UEFA Youth League in 2019, with Benfica being runner-up one year earlier.

7.3.2.1.1. Academies as a pillar of financial sustainability of Portuguese clubs

Despite its peripheral location in the European continent, Portugal plays a key role in the football 'planet', mainly as a talent-exporter (Tiesler & Coelho, 2007). That sense of relevance contributes to boosting national identity (Tiesler & Coelho, 2007) and may contribute to justifying the central position that football has achieved in Portuguese society. Football is thus a 'national obsession', with broad media diffusion that not only stems from (or leads to) regular success on-the-pitch, but also results in frequent negative episodes of violence – verbal and physical - and criminality, like the invasion of Sporting CP's training center by its own fans in May 2018. As Coelho and Tiesler (2007) summarise, "most Portuguese seem to regard football, and its results, involving club teams and the national [squad], as a safe indicator of the `quality' and competence of the country and its inhabitants" (p.580).

The hyper-commercialisation of professional football (Morrow & Howieson, 2014) affects Portuguese clubs too. The Portuguese league is unable to compete with the so-called 'Big-5' leagues (England/Wales, France, Spain, Italy, and Germany) in terms of broadcast revenues and sponsorship deals. For example, while in 2018/19 each of the 20 Premier League clubs received between £96 and £150m related to match broadcasting rights, in Portugal the top-5 clubs (Benfica, Porto, Sporting CP, SC Braga and Vitoria SC) negotiated each 10-year deals (2016-2026 or 2018-2028) that range from €90m (Vitoria SC) to €300m (Benfica) for the whole duration of the contracts (Gonçalves, 2019). Thus, there is a heavy reliance on player development and transfers to combat high levels of debt (Observatório do Futebol, 2019) accumulated by the majority Portuguese clubs.

A report published by the Portuguese League in 2020 revealed that just with the transfers of players who emerged from 'B' - reserve - teams, clubs earned €973m between 2012 and 2019, with Benfica alone receiving €459m (Liga Portugal, 2020). When transfers of first-team players are included (see table 5 for a detailed description), it becomes clear that the 10 most profitable Portuguese clubs made more than €1500m in the last decade (Transfermarkt, 2021b).

7.3.2.1.2. The academy

The academy where the present investigation took place belonged to one of the biggest Portuguese clubs, a centenary institution that counted on an annual multi-million euro budget and several thousands of paying members. Its first team regularly took part in international competitions and its academy received the maximum grade (5 stars) awarded by the Portuguese FA's youth certification programme in 2019, having a history of developing and selling players to some of the most competitive European leagues. The club's youth sector had almost 700 players, spanning from the football schools to the under-23s team, and distributed by different geographical locations across the country. Circa 300 players were part of the competitive teams, with dozens living within the academy's premises.

Table *5*: Difference between earnings and expenditure (in €m) on outgoing and incoming transfers of Portuguese clubs (2009-2020) Source: Transfermarkt.

Club	Total amount arrivals (million euros)	Number player arrivals	Total amount departures (million euros)	Number player departures	Departures/ Arrivals Difference (million euros)
SL Benfica	407.66	418	1010	409	**603.35**
FC Porto	413.89	379	796.70	374	**382.81**
Sporting CP	240.96	355	451.19	344	**210.23**
SC Braga	56.09	358	202.52	352	**146.44**
Vitoria SC	18.43	259	88.97	248	**70.54**
Portimonense	5.22	298	51.41	302	**46.19**
GD Estoril Praia	2.04	321	37.29	315	**35.25**
Rio Ave FC	7.33	276	40.61	279	**33.28**
CS Maritimo	0.925	215	28.45	222	**27.52**
CD Nacional	7.29	242	29.13	245	**21.84**

Coaches, sports psychologists, nutritionists, medical, and other support staff were full or part-time employed, depending on the age groups they worked with, i.e. staff working with older age groups – from under-17 above – tended to have full-time contracts. Furthermore, the academy's infra-structures included a handful of football pitches – with natural and synthetic surfaces -, performance analysis suites, meeting rooms, canteen, several changing rooms, and a transportation service permanently available to drive players to and from their homes, school, and training/playing venues.

7.3.2.1.3. The team

Despite proposing to undertake a holistic examination of creative learning within the football academy, and having full access to the entire academy's facilities and staff, I interacted more closely with the under-13s team (players born in 2006 and 2007), including its 20 players, their parents, and staff (e.g. Head Coach, Assistant Coach, Goalkeeping Coach, Team Manager, Physiotherapist, Sport Scientist). The choice of the under-13s team was motivated by this age group being positioned at a transition level between recreation and competition (see, for example, FIFA's Youth Manual, n.d.), and due to the interest it has received from other sporting creativity researchers (e.g. Memmert, 2010, 2011).

In a study that explored the relationship between creativity, expertise, and attention, Memmert (2011) recruited participants aged between 7 and 13 years, justifying that "psychological studies have shown that creativity is developed early in life and that the greatest improvements in creativity can be expected during this time" (p.95). The present research does not aim to further validate or refute this claim, but to examine how interactions between different stakeholders in a professional football academy may contribute to fostering or inhibiting creative expression at this level. Additionally, in a recent action research project with the under-17 team of an elite Danish football academy - and in line with earlier studies (e.g. Santos et al., 2016) - Rasmussen and colleagues (2020b) advised that "clubs should preferably start to nurture creativity at younger ages to ensure that players experience the impact of creative activities" (p.30).

7.3.3. Participants

A total of 14 participants contributed to this study: one head coach – aged 42 years, with a degree in Physical Education, a day job as a school teacher, holding

a UEFA B licence, and with 17 years of experience; an assistant coach - aged 28 years, with 8 years of experience, and a Portuguese FA C coaching licence. Both were employed on a part-time basis. Seven male players aged between 12 and 13 years, with an average 5 years of competitive experience (SD=1), belonging to the academy's under-13 team, which played in the regional under-15 second tier league and coached by the participating coaches; four parents of the participating athletes - three males and one female, aged between 41 and 56 years (M=49.3, SD=6.40); one full-time Head Academy Psychologist (HAP) aged 33 years, with 11 years of experience, and holding a Masters in Sport Psychology; and one full-time Head of Academy Coaching (HAC) aged 42 years, with a UEFA Pro licence, a Sport Science degree, and 18 years of coaching experience.

7.3.4. Procedure

The opportunity for the case-study arose due to a Portuguese club's HAC expressing interest in extending the collaboration initiated in study 1, in which he took part. Thus, this case study became a joint, participatory effort (Reilly, 2012), and represented an opportunity "to understand not just what a participant says they do, but also what they do in everyday life" (Thorpe & Olive, 2016, p.125). After ethical approval was granted, a face-to-face meeting with the HAC took place to define how the project would be operationalised on a day-to-day basis. It was agreed that I would accompany all the activities of the under-13s team for an entire month - between 1 April 2019 and 4 May 2019. Thus, I observed, *in situ*, three 90-minute training sessions each week (Mondays, Wednesdays, and Thursdays), one competitive match (Sunday) part of the regional under-15s league, two video-analysis sessions (prior to two Thursday training sessions) and five competitive matches played in an international tournament (under-13s) which gathered some of the top Portuguese, Spanish, and Danish academies, and including a team from Guinea-Bissau. The event took place in Lisbon, in April – period of Easter school holidays - and lasted 5 days. During the tournament, I was also invited to join the group for all meals outside their accommodation – lunch and dinner. I did not interfere in any of the training sessions or matches, maintaining some physical distance from the participants, either by standing on the side of the pitch during training or mixing with spectators during matches. However, in one match of the regional league I was invited to watch the pre-

match preparation rituals, including the team talk in the changing room prior to kick-off. While I attempted to maintain a professional distance, my daily presence next to the team resulted in the development of trust and friendships with participants, potentially influencing the group dynamics and interactions between coaches and players, and transforming me at times into an involuntary *confidant*, something that will be discussed later in this chapter.

Furthermore, I was allowed to interact freely with all players and academy staff (e.g. coaches, team manager, sport psychologist, HAC), and had full access to the academy's facilities – not open to the public – outside training days/times too. This allowed me to collect data at various moments and locations (e.g. cafeteria, reception hall, coaches' offices) and to interact with different actors. Consequently, I could obtain a more holistic, multi-plane perspective of the environment (MacQuarrie, 2009) and the daily functioning of the academy. Due to the club's internal regulations and data protection requirements, the under-13s team manager – person mainly responsible for administrative and logistic tasks relative to that age group - acted as a gatekeeper between myself and the parents with regards to arranging the focus group with players and parental interviews (see participation info sheets in Appendix 4).

7.3.5. Data collection

In their narrative systematic review of research on organisational creativity, Anderson and colleagues (2014) encouraged the adoption of "more bold multilevel designs to explore factors implicated in both creativity and innovation" (p.1302). Answering that call, and in line with MacDonald and Allen's (2019) investigation of coach-created climate in canoe slalom, I used different methods of data collection – *in situ* observations, field notes, and audio-recorded, semi-structured individual and focus group interviews – to achieve a more comprehensive understanding of how different actors and artefacts interacted within and outside the academy and how that impacted opportunities for creative learning.

7.3.5.1. Observations

Observations are a data collection method aimed at the systematic recording of naturalistic human behaviour (Thorpe & Olive, 2016). They allow researchers "to see first-hand what is going on rather than simply assume we know" (Patton,

2014, p.499). At the start of the data collection process, I followed Schwandt and Gates' (2018) suggestion, entering the academy with a broad research question - *'What are the challenges and opportunities for creative learning in this environment?'* - and using Tanggaard's (2014) general principles of a creative learning community as sensitising concepts (Patton, 2014). Thus, I started my observations as a focused witness (Tracy, 2019), entering the academy with a clear idea of the topic I wanted to study, the people I would most likely interact with, and knowing the exact time-frame of my presence (Tracy, 2019). However, while conducting the observations, I tried to keep "an open eye to the unexpected" (Schwant & Gates, 2018, p.603), which led me, for example, to enter the academy several hours prior to the under-13s training sessions that usually took place in the evening.

What I observed was certainly not unbiased. Indeed, Patton (2014) explains that "our culture shapes what we see; our early-childhood socialization forms how we look at the world; and our value systems tell us how to interpret what passes before our eyes" (p.497). Indeed, case-study designs are typically characterised by empathic interactions between the researcher and those in the researched environment, making objectivity and distancing difficult to achieve (Tracy, 2019). Notwithstanding, I took several steps to maintain the authenticity of the observations, like taking field notes (see Appendix 5), writing descriptively, probing my perceptions during informal discussions with insiders (and later, during preliminary data analysis), using a theoretical framework to help guide data collection and generate questions (Creswell, 2009) and reflecting on the strengths and limitations associated with my perspective (Patton, 2014). Data collection during observations was limited to handwritten field notes due to child protection legislation. I annotated descriptions of training drills, match events, and other occurrences that caught my attention. Furthermore, I added brief, speculative reflections to these descriptions, to be probed later, during interviews with coaches and the focus groups with players. In total, observation records amounted to 24 double-spaced A4 pages.

7.3.5.2. Interviews with coaches

The template constructed for semi-structured interviews with coaches was based on *in situ* observations and numerous informal conversations with players and staff. Questions were open-ended, so the guide was used "to facilitate talk

about experiences, circumstances, [and issues]" (Smith & Sparkes, 2016, p.104), which participants were invited to elaborate on. The first section was dedicated to coaches' conceptualisations and beliefs regarding creativity, e.g. how they defined it, its 'origins', and how they envisioned its ideal development. The other section attempted to gain further insight on episodes that I had watched during observations and to establish how coaches' believed their work environment contributed to creative learning discussing, for example, their perceptions of organisational climate, leadership, and availability of resources. The two interviews with coaches lasted 30 and 57 minutes and resulted in a total of 37 double-spaces A4 pages of text. After each interview, a pseudonym was attributed to each interviewee, based on their position (HC for Head Coach and AC for Assistant Coach).

7.3.5.3. Focus Group with Players

Children may perceive that due to their age and dependence status their opinions do not have the same importance or weight of those of adults. However, article 12 of the United Nations Convention on the Rights of the Child states that "children have the right to participate in decision-making processes that may be relevant in their lives and to influence decisions taken in their regard" (Lawnsdon, 2019). To date, research on sporting creativity has rarely included their voices. The exception is Rasmussen and Østergaard's (2016) work on 'The Creative Soccer Platform', in which a focus group interview was conducted with four young amateur players. Focus groups are a form of interview which is particularly useful to stimulate interaction between participants in a group, and suitable for interactions between researchers and members of vulnerable groups like minors (Adler, Salanterä, & Zumstein-Shaha, 2019).

The researcher plays an important role as a "moderator whose task is to create a supportive atmosphere in which interaction occurs between participants so that the expression of personal, multiple, and sometimes conflicting viewpoints on the topic of focus are elicited" (Smith & Sparkes, 2016, p.104). The focus group conducted involved 7 players who voluntarily agreed to take part in the interview, and whose parents consented to their participation. To avoid any potential influences of social desirability related to the presence of parents or coaches that could condition the children's responses, I conducted the focus group prior to a training session in a meeting room at the club's academy, only with the

supporting presence of a club director who acted simultaneously as child protection officer.

Similarly to the interviews with coaches, an interview guide was used to prompt discussion. It was based not only on players' beliefs regarding creativity, but also on how they perceived their daily activities and the academy and school environments to foster – or not – creative development. A pseudonym was attributed to each interviewee, depending on their order of intervention in the focus group, ranging from 1 to 7, i.e. 'Player 1' for the player who spoke first during the focus group. The focus group lasted 33 minutes and, at the end, one player (Player 5) waited for all others to leave the room and asked if we could speak privately. After consulting the child protection officer, which agreed to remain in the room, Player 5 was given the opportunity to talk freely, and the conversation lasted 15 minutes. In total, 48 minutes of interviews with players were recorded, resulting in 28 double-spaced A4 pages of text.

7.3.5.4. Interviews with parents

In study 1, parents were often described by HACs and HARs as inhibitors of young players' creativity, who often imposed excessive pressure on their children to perform. However, similarly to young players, parents' voices have rarely been included in research on sporting creativity (the exception being Martin & Cox's (2016) retrospective, life positioning analysis of Steve Nash). Parental interviews were organised by the team manager, who invited via e-mail all parents to take part. Four agreed, and the interviews were conducted in a quiet area at the club's cafeteria, following the club's instructions.

Questions were also based on my observations of training sessions and competitive matches and on earlier conversations with players and staff. They were mainly aimed at gaining an understanding of parental perceptions' of their children's involvement in football, the level of support that parents and children received from the academy, and how satisfied parents were with their relationship with the club and how they believed it could impact – or not – creative learning. The four one-to-one interviews lasted between 23 and 34 minutes, and resulted in a total of 36 double-spaced A4 pages of text. After each interview, a non-gendered pseudonym was attributed to each interviewee, based on their role – i.e. P for 'Parent' - and the order of the interview (ranging from one to 4). For example, the first parent interviewed was designated as 'P1'.

7.3.6. Data Analysis

Data analysis is an ongoing process, a recursive, iterative exercise, rather than a separate, isolated event that occurs after data collection and before the writing up phase (Taylor, 2014). With regards to case studies, they offer great flexibility (Collins & Stockton, 2018), while remaining simultaneously an under-developed method, e.g. at the analytical stage (Yin, 2018). In that vein, Collins and Stockton (2018) emphasise the usefulness of theoretical frameworks for case-study analysis, as theories help to "make sense of difficult social interactions and phenomena, and articulating a theoretical framework helps the sense-making process to be more explicit" (p.6). Thus, Tanggaard's (2014) situated model of creative learning was used as a tool to make sense and help interpret the findings (Nelson, Potrac, & Groom, 2014). Furthermore, it answers Anderson and colleagues' (2014) call for more "models and theoretical propositions to explain cross-level and multilevel innovation" to be used.

Finally, it must be noted that in this case-study, Tanggaard's (2014) three principles were not used as ends-in-themselves but as 'sensitising concepts' (Denzin, 1978; Patton, 2014) to frame my observations and interactions with and between participants and ultimately illuminate how creative development occurred – or not – in the academy. Patton (2014, p. 537) explains that "while the inductive nature of qualitative inquiry emphasizes the importance of being open to whatever one can learn, some way of organizing the complexity of experience is virtually a prerequisite for perception itself".

Upon ending the period of immersion at the academy, I converted the handwritten field notes into typed text. Then, I listened to the audio-recordings of the interviews with parents, coaches, and players, which were subsequently transcribed and translated from Portuguese to English. After an initial reading and re-reading of the resulting documents, a preliminary deductive coding was conducted. This implied navigating 'back and forth' (Yin, 2018) between the case-study aims – i.e. to investigate the challenges and opportunities for creative development in a professional football academy *strictu* and *lato sensu* -, printed versions of the generated data (e.g. with different episodes from observations and quotes obtained from participants being underlined and/or highlighted with coloured pens), and my interpretations of these in relation to Tanggaard's (2014) three principles for a creative learning community (see Appendix 6), which served

as sensitising concepts (Patton, 2014). Additionally, I used seminal research on organisational creativity (e.g. Woodman et al., 1993; Anderson et al., 2014; Amabile & Pratt, 2016) as a theoretical scaffold during the initial coding phase, probing the data against three categories that could reflect the three levels of analysis most described in the literature – individual, team, and organisation (Anderson et al., 2014). However, the interdependency across levels was clear. Therefore, to better capture the inherent complexity and stay true to the transdisciplinary approach, I focused on the emerging issues rather than the levels themselves.

After completing the initial coding phase, the analytical process and the findings that emerged from it were discussed with my supervisor and two critical friends (two professional coaches with experience in academy settings at the international level) on separate occasions. Then, I conducted two more interviews – via telephone - with two key stakeholders in the management of the academy physical and human resources - HAC and HAP -, which lasted 38 and 65 minutes respectively. During these conversations I shared, discussed, and clarified preliminary findings, without referring to any particular episodes that could identify the participants involved.

Adopting such collaborative approach is important in participatory efforts, "not only to attain a more solid base for the final research report, but sometimes also to clear up misunderstandings, and ameliorate internal social relations, pointing everyone in the same direction." (Schwant & Gates, 2018, p.603). Subsequent to the discussion of preliminary findings with the HAC and HAP, the initial coding was reformulated to reflect their suggestions and clarifications. For example, while the lack of human resources concerning the psychological support of young players had been identified as an important issue, both the HAC and HAP informed me that upon my departure the club had added two more sport psychologists to the academy staff. These changes and the reformulated coding were again discussed with my first supervisor and critical friends, until a final structure was achieved.

7.4. Results

As referred above, results have been framed under three sensitising concepts, i.e. Tanggaard's (2014) principles for a creative learning community: (1) immersion in the topic of interest, in traditions, and in the subject matter; (2)

experimentation and inquiry learning; and (3) resistance from the material of interest. A total of 15 themes that describe and summarise emerging issues – i.e. challenges and opportunities for creative development - identified during my research at the academy have been distributed across each principle for clearer comprehension. Nonetheless, it must be referred that many – if not all – themes associated with one principle are related/may influence other principle(s). Each theme is accompanied by supporting evidence such as quotes from interviews and focus groups with participants and my field notes.

7.4.1 Concept 1. Immersion in the topic of interest, in traditions and in the subject matter

This section encapsulates the opportunities and challenges for creative learning that relate to players' involvement with football, i.e. their processes of acquisition of domain-specific knowledge and experience, and is composed by five themes, summarised in table 6.

Table 6: Summary of themes relative to immersion in the topic of interest, in traditions and in the subject matter

Sensitizing concept	Themes
Immersion in the topic of interest, in traditions and in the subject matter	Football as a cherished, omnipresent activity in players' lives
	Immersion beyond the football pitch
	Juggling football and studies: a difficult balance
	Pushy parents: a barrier for creative development
	The commodification of children and the illusion of professionalisation

7.4.1.1 Football as a cherished, omnipresent activity in players' lives

Players reported they took advantage of numerous opportunities to immerse themselves in football. Despite their young age, the vast majority of players had been playing competitive football for about six years but had started to play informally even earlier: "my son has always played [football], even on the beach, even with his little friends at kindergarten, For him playing always involves a ball" (P1). The availability of free-to-use, council-financed multi-sport facilities as

well as small community, grassroots clubs near the young players' homes created opportunities for such early, intensive engagement with football:

> "There was a colleague of mine who coached little kids [in the neighbourhood], and when my son was 4 years old he brought him there [to the local club]. (…). In my area there were many kids, older and everything, and they did a lot of...every two goals scored, one team left and other came on. And my son spent entire afternoons playing like that. I think he grew a lot there. It was fundamental for him." (P4)

Players were intrinsically motivated and highly passionate about football, reporting it was their preferred activity, which they prioritised over all other commitments. At the club, they had three 90-minute training sessions every week (Monday, Wednesday, and Thursday), and a competitive league match on the weekend. On Thursdays, before the session on the pitch, there was a team video-analysis meeting in which tactical clips of the previous match and of the upcoming opponents were shown to the players. Outside of the academy, the young athletes used school breaks to play football with colleagues and during week days. At the weekend they tended to play at home – alone or with siblings - or with team-mates and friends at free-to-use, council multi-sports facilities:

> "How many hours a week do you usually play football outside the academy? [FF]
>
> Me, maybe 10 [Player 3]
>
> It depends...[Player 2]
>
> During weekends the whole afternoon [Player 4]
>
> I also play during weekends the whole afternoon [Player 2]"

Although at school all players took part in mandatory 3 hours of physical education classes every week, where they tried other sports like swimming, basketball, or handball, all players indicated that football was their preferred activity. Indeed, they all dreamed of becoming full-time professionals: "if someone asks me if I would rather play Playstation, use my smartphone, or play football, I prefer playing football (…). We all [focus group] do!" (Player 1).

7.4.1.2. Immersion beyond the football pitch

Besides their playing and training activities, the young athletes had several other opportunities for immersion. For example, all players stated that they

regularly watched national and international matches that were broadcasted on television, and frequently used platforms like YouTube to watch videos of their favourite international players to look for inspiration: “when I watch a game on TV I look at the player who plays in the same position as me, the movements he does, the things he does during the match [Player 2]”. Additionally, the club invited a group of four to five under-13 players to take up the role of ‘ball-boys’ whenever their Reserves [‘B’] team played their Portuguese Championship (second tier) home matches. Players eagerly engaged in this opportunity.

All parents were supportive of their children’s involvement in football; male parents were especially enthusiastic about the game. As a result, they provided extra opportunities for their children to experience football, e.g. by bringing them to watch the club’s first and youth teams playing. One of the parents, who was also a coach with another club, was even more extreme:

> “I spend entire days here [at the son’s club academy], whole afternoons, days, I watch the under-14s, 15s, 17s, 19s (…). My wife also knows that if I leave the house I go to watch football, I am not drinking at any coffee shop, nothing. If I can, I will spend 12 hours here [at the academy] on Saturday, and 12 hours on Sunday.” [P4]

7.4.1.3. Juggling football and studies: a difficult balance

Overall, young players within the academy’s under-13s had numerous opportunities for immersion in the football domain, whether directly or remotely. However, at times it appeared that immersion could become excessive and potentially detrimental for creative learning and players’ well-being. For example, some parents regarded the intense involvement of their children as an obstacle to family life. Even during school breaks and official holidays, there would be training sessions and friendly matches scheduled. The academy teams also participated regularly in national and international tournaments. Two parents mentioned that their children were so embedded in the ‘academy bubble’ that football was their top – and only – priority. Indeed, their children showed a lack of interest and motivation with regards to school activities:

> “From the moment he joined this club, school stopped being a priority for my son (…). I thought football was going to be a complement, and it became the opposite. In my son’s mind, school became the complement in

relation to football. And for me it was complicated because he was used to having 98, 99, 100% scores and his grades dropped a lot and his behaviour also got worse." [P1]

The club seemed to be conscious of the potential impact of its young players focusing too much on football and too little on school. Therefore, the Psychology department established prizes for the best students of each term, and created a study room in the academy with teachers available to support students with their homework and/or exam preparation. However, there was little evidence that these measures were effective. The club appeared to pay much more attention to player disciplinary behaviour, and mainly for reasons of image and reputation management:

"I have been asked for my son's grades several times, but then they [club] keep it for themselves, we don't know what happens." [P3]

"When my son's grades at school dropped dramatically, I thought the best way to punish him was taking him out of football, because it's the only thing that he likes, he doesn't like computer games, nothing. It wasn't easy because the club did not want to accept my decision. (…) They questioned my approach. (…) In his previous, smaller club, I remember that there would be some kids sitting on the substitutes' bench because their grades had dropped. (…) While he was on that [community] club, I never had any problem" [P1].

The academy's head psychologist (HAP) admitted the difficulties in monitoring players' school performance, which he justified with the limited human resources available: "it's just me and my part-time colleague for a universe of 200 athletes; naturally there are many leaks here". Indeed, psychological support was mainly available to under-19 and under-23 players, except if younger players lived in the club's residence away from their parents. At the end of the season, the club planned to expand the psychology department to three full-time psychologists.

7.4.1.4. 'Pushy parents': a barrier for creative development

All participants indicated that they had met various parents – all male - who were obsessed with their children's football activities, imposing unhealthy levels of pressure on them to become professional stars. The HAC admitted that in some

cases that pressure resulted in early drop-out: “Sometimes I feel that parents want this more than their kids, and I think that is also why many kids also lose interest in playing football.” Some parents took their children’s activity too seriously, something that became more visible during competitive matches, for example in the regional league:

> “With the score getting tighter, I noticed increased tension (…). Parents from both sides started arguing regularly, with some insults from side to side. The assistant referee was also not spared, mostly by parents of ‘my’ team, who seemed to ignore that he was clearly inexperienced and very young. (…) The video analyst was clearly upset with this situation, commenting it was common during matches. Parents did not seem to be able to control their emotions, and I felt that players internalised it, with the match becoming rougher.” (Field notes, 08/04/19)

However, these cases of excessive parental engagement were not an exclusive of the academy I was embedded in. Indeed, during an under-13 international tournament that we attended, there were “parents of one of the Lisbon clubs with personalised hoodies with their sons’ oversized pictures on them, and scarves with their kids’ names. It made me wonder if this wasn’t too much pressure and ‘professionalism’, too soon” (Field Notes, 18/04/19).

In previous years, when the academy teams were still playing at a council venue, parental behaviour had reached extreme levels. Some male parents would openly give instructions to the pitch during training sessions – “parents would even shout ‘run, shoot, pass’” [Player 2] - and others resorted to menacing behaviours when their children did not get frequent game time. The under-13s Head Coach reported that he “had problems with various parents. I even received death threats during these years! Parents who become completely altered because they cannot accept that their son is less talented than some of his colleagues”.

In order to reduce the pressure imposed by parents on young players and their coaches, the club implemented two important measures: firstly, the creation of a ‘team manager’ role across all age groups. The team manager was a person with no technical responsibilities, whose remit was ‘only’ related to the communication between the club and parents and other administrative duties. Thus, parents did not speak with coaches directly anymore. Secondly, since moving to the club’s new academy, the board decided to forbid parents from

attending training sessions and friendly matches, which players perceived to have a positive effect on their learning:

> "It's better to train without parents! [Player 3]
>
> Yeah, because we are the ones who play, not our parents! [Player 4]
>
> And there is only one coach, there are no coaches on the stands. [Player 3]"

7.4.1.5. The 'commodification' of children and the illusion of professionalisation

As explained earlier (e.g. chapter 4), football academies can be important sources of financial sustainability for professional clubs. Therefore, identifying and recruiting the best young talents is crucial for success. Parents and coaches commented that the ferocious market competition between different professional clubs in Portugal results in frequent attempts to lure players as young as 10 years to join them. That means some clubs ignore ethical and safeguarding principles, as I witnessed myself during a tournament in which the under-13s participated:

> "While we were watching one of the matches, I notice an unknown older man approaching two of the club's under-13 players on the stand and starting a conversation. After a few seconds, noticing that situation, the HC immediately shouted to the players to come near him and to stop talking immediately to the man. He later explained to me that the man worked for one of the finalist teams, and was trying to get the details of some of our team's best players, perhaps to try and sign them" [Field notes, 21/04/2019]

Although joining another professional academy usually requires children to move dozens or at times hundreds of miles away from their area of residence, and lose close contact with their parents on a daily basis, participants suggested that most clubs usually treat young players as commodities, dismissing them after only one or a few seasons if players fail to adapt or develop as quickly as expected:

> "My son already had offers from all the biggest clubs (…), but I know how it works...I see parents...the kids sign for club X or Y, they are there 4, 5 years and then are sent back...and that process, they never recover. Those 4, 5, 6 years, parents will never get them back." [Parent 4]
>
> "I know examples of many clubs who receive players in their residences and they really create there real prisons, we have some kids who have been there and they feel that everything becomes much more difficult, and the distance from the families becomes more accentuated." [HAP]

Moreover, the widespread use of social media – especially Facebook and Instagram - among players and their desire for social approval also contributed to amplify illusions of professionalisation that could have nefarious consequences on immersion and, consequently, on creative learning too:

> "Players create an image, they create that idea in their own minds that they are the greatest...they and their parents (…) Then they might leave for a bigger club and suddenly the year after they are released and no-one else wants them anymore. That, in terms of image with friends, family, it's a total disappointment, there are kids who go really low, they even want to drop out, (…) because they created an image and then they cannot deal with it, even at school." [HC]

In order to improve the developmental environment, the club created and delivered a number of workshops to educate parents and players in terms of desired behaviours within the youth football scene. They also run sessions for players to discuss their use of social media.

In resume, young players spent high amounts of time playing football in different environments - e.g. academy, school, home, local pitches – which were available near them and free to use. Playing football was their favourite activity, and they also engaged with the sport beyond the field of play, either as 'ball-boys' during Reserves team home matches or following professional matches on TV and the internet. Additionally, parents – especially fathers – shared their kids' passion for football, often bringing them to watch live matches of other age groups at the academy or of the club's first team at the stadium.

However, at times parental behaviour was described has having a negative impact on children, given that fathers interfered with their autonomy, providing unrequested advice and displaying rude or threatening behaviour towards opponents, match officials and even coaches. Furthermore, some parents worried that their children spent too much time engaged in football. Although they recognised potential negative consequences on family life, school performance and identity development, there seemed to be no adequate support from the club to mitigate these issues. Finally, the growing marketisation of the sport also led to young players being often treated as commodities and lured away from their local towns for high sums of money and promises of prestigious careers which were often unfulfilled and led to disengagement with the game and early drop-out.

7.4.2. Concept 2. Experimentation and inquiry learning

Under this principle I describe the opportunities and limitations for experimentation and self-directed or peer learning found across multiple levels of the academy's ecosystem. A total of eight themes are included in this section and summarised in table 7.

7.4.2.1. Training sessions: mixing structure with flexibility

The under-13s training sessions were usually planned by the Assistant Coach under the supervision of the Head Coach. Furthermore, to ensure the alignment of the training process with the academy's philosophy, the HAC checked and approved weekly training plans proposed by coaches from each age

Table 7: Summary of themes relative to experimentation and inquiry learning

Sensitizing concept	Themes
Experimentation and inquiry learning	Training sessions: mixing structure and flexibility
	Coaches' support as key for experimentation
	Moving outside of the 'academy bubble': home and school as 'creative havens
	Parental pressure: the biggest barrier for risk-taking
	The need for money and results: everyone is under pressure
	Player profiling: a barrier for creative learning'
	Precariousness as a source of tension among staff
	Early professionalisation: the risks of maximising the 'academy bubble''

group. A digital database with hundreds of training tasks had been created in the academy and was nurtured by, and accessible to all coaches, under the supervision of the HAC:

> "[The database] is helpful so that we are not always changing what the player does. Players are used to a certain type of tasks; they are adapted, so from that foundation [the database] allows us to create an adaptation or two (…) and to find a way of making the training task more effective." [Assistant Coach]

While the academy management had a clear vision of how their youth teams should play, the HAC explained that the coaches were free to choose tactical systems that they found suitable for the characteristics of their players:

> "The preferred system is the 4-3-3 but as you saw across other age groups not all teams played in the same way. Now, in terms of the general principles, yes, there are common things across all teams and that for us is the most important."

It was evident that coaches played an instrumental role in promoting experimentation and inquiry learning within the team. On the one hand, despite being on a part-time contract like the HC, the Assistant Coach did not have other professional activity (the HC was a P.E. teacher in a local private school). The AC spent several hours every day at the academy focusing on match analysis and on designing training tasks with high representativeness, aimed at promoting player decision-making:

> "We usually have the tendency to tell players what they need to do. I think we should worry more in controlling the context instead of controlling the players. Controlling the context, seeing what the context leads the player to do, and let the player decide by himself, making as many mistakes as necessary" [AC]

7.4.2.2. Coaches' support as key for experimentation

During training sessions and match days, both coaches were constantly encouraging players to be confident in their abilities and take risks. The Head Coach often resorted to humour as a tool to mitigate the players' competitive anxiety, e.g. offering players "prizes for the best nutmeg and goal before the match" [Field notes, 06/04/19]:

> "One of my roles (…) is to free my players from the stress they are under on a daily basis (…). I feel that as the years go by, the stress is increasing and as they see the club growing they are more afraid of being released and making mistakes. [I need to] have a more mental attention with them, talk to them, make them feel relaxed, so that they are at ease, otherwise you cannot extract 100% from them" [HC]

As a former professional player with a wealth of experience, the Head Coach also supported young players in finding new strategies to solve problems

that emerged during training/game situations. During the focus group interview, Player 3 commented that “the HC gives us freedom”, something that Player 1 agreed with: “Yeah, and he even teaches us tricks and dribbles!” Interestingly, despite the noticeable tension between the Head Coach and his Assistant (which will be discussed below), the combination of a ‘teacher-like’ profile - Head Coach - with a more competitive one – Assistant Coach – appeared to work well with regards to the promotion of experimentation. The Head Coach served as a role model and father figure, providing emotional support to young players. In turn, the Assistant Coach’s attention to detail and tactical organisation skills allowed them to feel comfortable and confident when facing challenging situations.

> “[During the training session], individual actions that end in a goal are rewarded with extra points, and players are also required to think of different ways of celebrating their achievements (…). There is high tempo and competitiveness but players also seem to enjoy themselves, celebrating each nutmeg enthusiastically” (Field notes, 08/04/19]

There was great harmony between coaches and players, and the close-knit, supportive relationships, were evident at the end of each session, when players and coaches all engaged in a mini-tournament:

> “I notice the players are motivated and happy during this game. There is healthy, fun competition. During the game, a player with a blue bib (the ‘HC’s team’) calls the coach, who was talking to me, to tell him very proudly ‘we’ve already scored twice!’. At the end, the HC grabs the smartphone and the winning team always takes a picture as a memory of the triumph. Ending like this makes them want to come back for more.” [Field notes, 03/04/2019]

During my stay at the academy, I noticed as well that much experimentation and inquiry learning occurred outside of formal training drills. Indeed, I could often notice team-mates challenging each other to try new things while they were waiting to take part on a training task or during transitions between drills:

> “[During the training session] players take the 11v11 game really seriously, with tackles, always claiming for ball possession when it goes out. (…) In the meanwhile, on the side of the pitch, the other players are trying ‘no-look’ passes.” [Field notes, 10/04/2019]

> “Even the players recovering from injury are outside doing keepy-upies [trying to keep the ball in the air as long as possible].” [Field notes, 11/04/2019]

7.4.2.3. Moving outside of the ‘academy bubble’: home and school as ‘creative havens’

School was considered by players as a perfect environment for creative learning, on and off-the pitch. With regards to football, players felt breaks were ideal for improving skill and building self-confidence, as they could try new things without being afraid of negative consequences. Player 1 commented that “when I want to dribble and stuff like that, I do that more in school, even to check if I know how to do it or not. And then I apply it [in training].” Similarly, the HC explained that:

> “At school you can get rid of that anxiety, that stress, and you try different things, you see? You are perhaps in a more accessible context where you can shine, but that brings you more confidence to do certain things that in an academy context are not always successful.”

Simultaneously, they felt that the opportunity to play other sports or dance, and take up classes like ‘Arts and Crafts’ were also beneficial for self-expression:

> “Do you think that school, the way it works, helps you being creative? [FF]
>
> Yes, like Arts and Crafts, we can draw. [Player 4]
>
> We can do things that come to our mind, and we also have to be creative”. [Player 1]
>
> In Physical Education I even learned how to dance folk music, so… [Player 4]
>
> We also have to do like...maybe 2 boys and 3 or 4 girls, and we have to do dances and be creative and then the teacher evaluates us according to our dance and to our creativity.” [Player 1]

Parent 1 also highlighted the role of Physical Education teachers, who made the young football players feel welcome to join their after-school clubs, even when it was clear that they prioritised football: “the basketball teacher...every time...he knows my son has commitments, that he cannot go, but every time there is a tournament he invites my son, because he know that he likes basketball (…), my son likes everything that is sport.”

Players' conceptualisations of creativity as something all players can express, in every position, and every phase of the game, made them keen on experimenting. Even if they did not have anyone else to play with:

> "I make some holes in a piece of cardboard. And I have to place the ball in those holes." [Player 2]
>
> "[When at home] I try dribbles and stuff like that. And then I play long-passing games with my brother. Then I and my brother also invent heading games, and then he tries to shoot the ball over my head and then I also need to shoot it, and so we improve a lot." [Player 1]

7.4.2.4. Parental pressure: the biggest barrier for risk-taking

Most participants referred to parental pressure – together with social media - as the key barrier to players taking risks and expressing themselves on the pitch. Parent 3 gave an example of how he had upset his son quite recently:

> "Before the tournament, which was a prestigious one, we had a family issue...I tried to alert my son for some...the level of intensity, I believe we have a lower level of intensity than club X, Y, and Z. So I found myself alerting him on that sense. And my son took it badly. He complained to his mum that I was pressuring him".

In a similar vein, the Head Coach gave an example of the unintended consequences of well-intended actions, describing how the father of one player, who also had a coaching background, seemed to be limiting the development of his son by trying to instil in him a very professional mentality from an early age with the hope he could succeed in a future career:

> "This year my focus was on undoing the rigid habits that I know the dad creates on him (…). From brushing his teeth, he has the small brush, the little brush, the kid does not eat cake, does not eat this, and that, he is always on time, he looks like a machine, he is formatted, and that comes from the house. Football requires creativity, irreverence, other things. And watching the kid playing is becoming boring. Anyone who knows him can guess what he will do (…) He is always concerned with doing the same thing, working well, but then the rest is missing, he is staying behind. And he was always talented, a guy who was always ahead."

Curiously, during the focus group interview players denied feeling any parental pressure, which may have been due to a social desirability bias. In fact, when at the end of the focus group one player asked to speak privately, his perspective on the link between parental pressure and risk-taking could not have been clearer:

> "Do you think that parents put pressure on young players? [FF]
>
> Yes, mine do. (…) When I play badly they tell me. But I get really sad when they say it. I feel I could have done more. [Player 5]
>
> And you feel you don't take risks because of that? [FF]
>
> Yes, if I make a mistake I know already that I'm going to be told off. [Player 5]
>
> Do your parents want you to become a professional player? [FF]
>
> Yes. My brother also used to play here and he didn't make it. (…) I need to give joy to my family." [Player 5]

7.4.2.5. The need for money and results: everyone is under pressure

While some Portuguese clubs have successfully managed to transform their academies into important sources of financial sustainability, the HAP referred that the club's growing reputation and budget had resulted in increased pressure on staff and players to produce results on-the-pitch and consequently on balance sheets via player sales.

> "To an extent we are all always under pressure (laughs). We need to send players to the age groups above and get results" [HAC]
>
> "Coaches feel obliged to show results and growth (…). They are all under pressure depending on the results they obtain and this...we would enter a long conversation but I think this is something that comes from the top of the hierarchy, starting with the chairman." [HAP]
>
> "The coordinators are also under pressure from the presidents. Our club wants to be like the biggest ones so that means trying to win big tournaments." [HC]

Such emphasis on results was visible during the international tournament in which the team participated. Although the initial objective of the tournament was to give an opportunity for the coaches to integrate new players who would be

competing with the team during the next season, a heavy defeat against a local rival suggested that the process-orientation was merely superficial:

> "The match had barely finished and the HC's phone rang. The academy director was calling in a very angry mood about the defeat. The HC felt that the criticism was unfair because players were fatigued and he couldn't count on his best centre-back." [Field notes 19/04/2019]

The immediate demands imposed from the top of the structure appeared to create a 'cascade effect' across staff:

> "Do you feel pressured to obtain results? [FF]
>
> I do. [AC]
>
> But is it self-imposed? [FF]
>
> It's neither self-imposed nor imposed, because directly no-one has ever told me that. But you can see it from the feedback that you get [from senior staff] that if you win or lose the match, it is different." [AC]

Another consequence of such pressure for immediate results, even at the lower age groups, were the increased opportunities given to early maturers and the side-lining of late developers. The Head Coach revealed that:

> "The coach above my age group only wants players who are already fully matured, he just likes the big ones, and he doesn't care about the small ones. Why is he like that? Because he is afraid of losing. He is afraid of what may happen to him during the league. Do you get it? That's big pressure."

7.4.2.6. Player profiling as a barrier for creative learning

The HAC admitted that the club had clear expectations in terms of player recruitment, and that metrics like height were essential criteria for some positions, given the demands from richer markets which tend to invest in the academy players:

> "Goalkeepers, centre-backs, height can be an exclusion criterium. If they don't reach certain [height] values they will hardly reach a different level. So for them to reach our First Team they will need to have those characteristics and to be attractive for other teams they will need to have them too." [HAC]

This approach was not consensual among staff. For example the Head Coach commented that "if the player won't reach 1m88, 1m90, 92, he can have the greatest talent in the World, he will be released. I find that puzzling. But the other clubs do the same."

Indeed, many participants indicated that profiling represented an important limitation for experimentation. Some players, like Player 1, commented that coaches' tactical decisions sometimes limited their willingness to take risks, for example when they were moved away from a position in which they felt comfortable: "I was afraid of taking risks, because they put me playing as a full-back." On a different note, other players commented that they had few chances for self-directed learning and confessed that they would like to try playing in different positions from those they were commonly assigned, but coaches did not allow them to do so:

> "I would like to try playing in other positions, I don't really enjoy being a centre-back. [Player 5]
>
> Then why do you do it? [FF]
>
> I don't know, it must be because of my height." [Player 5]

The AC agreed that coaches were often guilty of formatting players, denying experimentation and opportunities for inquiry learning, a perception that was corroborated by the HAP:

> "Many times I feel that some players, many times the most creative, are a little bit castrated in the sense that they are pre-formatted to doing a certain type of tasks which sometimes do not really match their characteristics. And some confess to me and tell me 'I feel tied up, I want to do what I like doing but I am not allowed."

Moreover, coaches' beliefs regarding the origins of creativity could also limit experimentation. For example, the Head Coach commented that: "You are either born with it or not. That is why then some go to certain positions and others don't. Because some are born with a gift, which is different, they have a different fragrance."

7.4.2.7. Precariousness as a source of tension among staff

Although in terms of training activities the coaching staff seemed to be a 'perfect fit', during my stay at the academy I noticed a climate of tension between

the Head Coach and his Assistant, a situation that threatened to jeopardise team cohesion. On the one hand, the Head Coach did not choose his Assistant - he was nominated by the HAC and Academy manager -, and did not trust him, believing his ambition was not to stay with that age group but to move to a higher one as soon as possible. In turn, the Assistant and the Goalkeeping coach, who were close friends, believed that the Head Coach was not entirely committed to his role, benefiting from having a long history in the academy and a secure day job as a Physical Education teacher to adopt a more relaxed approach. Additionally, both younger coaches thought it was unfair that they received a much lower salary than the Head Coach, when in their opinion they did most of the work:

> "The AC stays behind at the end of the session and we chat a bit. The HC is not near us. He explains that the composition of the age group's staff was not intentional, and I can feel a certain distancing in relation to the HC. The AC speaks openly about his wish to become a professional coach at the adult level and says that is the only reason why he accepts to get paid less than the HC, when unlike him he spends most of his day in the academy." [Field notes, 03/04/2019]

While not clearly outspoken, it was clear that there were significant differences in terms of salary across staff, not only between head and assistant coaches but also across age groups. Those working with the younger teams were mainly hired on a part-time basis and received a fraction of the salary of the coaches of older age groups, who were often full-time employed. This meant coaches within the lower age groups, who had limited financial resources, would be tempted to show quick results so that they could be noticed and progress to a higher level:

> "Ideally we should all be earning at least something close. (…) I won't tell you that the best coaches need to be down here...I don't think it is more important being the under-6s coach than the under-23s...because in both sides you need to have the best coaches you see? That is why it [pay] should be equal." [AC]

7.4.2.8. Early professionalisation: the risks of maximising the 'academy bubble'

The increasing professionalisation of the academy setup led the club to sign agreements with local public schools for the club's players – from the age of 13 -

to have special schedules that could allow them to train during the afternoon instead of evenings as was usual. This also implied the creation of 'player-only' classes at school, which left the Head Coach and HAP somehow sceptical in relation to the children's ability to embrace other experiences outside of football:

> "They might not have a space to be with other people from different backgrounds, we know that football is a world where they can meet people from different walks of life, cultures, nationalities. That is also good for their future lives (…), but we [psychology department] defend that it is good for the players to go to an external school so that they don't get tired of each other, so that they are not dealing with the same people 24 hours a day, so that they can develop their social competences. We don't want to create here imprisoned kids, unsocial kids who can only talk about football and little more." [HAP]

Notwithstanding, the second phase of the academy building was already on its way, with clear plans for the inclusion of a school inside the academy. Nonetheless, the HAC believed that the danger of athletic identity foreclosure – i.e. "commitment to the athlete role in the absence of exploration of occupational or ideological alternatives" (Brewer & Petitpas, 2017, p.118) - was not that high:

> "Even if we move towards that internal [schooling] context, it will never be exclusively for football players, because thankfully our club has other sports and the idea is that the other sports can go in there as well. So it becomes a much bigger universe."

In summary, at the academy there was a well-defined coaching philosophy, consistent across all age groups. Although there were universal principles of play and a preferred tactical formation, coaches had relative freedom to adapt their sessions and the team's way of playing to the individual characteristics of players. Training drills were aimed at providing young players with a significant degree of autonomy in terms of decision-making, so that they could choose the best option based on existing contextual variables. Additionally, coaches were key figures for promoting experimentation, not only through the careful design of training sessions, but also due to the emotional support they provided to players, e.g. boosting their self-confidence before matches and encouraging risk-taking during training. However, most inquiry learning occurred during breaks and outside the academy, i.e. at home and school, where children did not feel pressure to perform.

Players also believed that doing other sports and taking part in different activities beyond football, such as dance and arts and crafts, favoured the development of their creative skills.

Once again, parental pressure was mentioned as an important barrier for creative development, given that the fear of scolding or disapproval led children to avoid taking risks and making mistakes. Similarly, it emerged that due to perceptions of job insecurity within the academy, staff felt pressured to show short-term results. This led some to take safer options, giving priority to early maturers in comparison to late developers. Player profiling based on biological metrics (e.g. predicted height) and early positional specialisation were also referred as challenges to diversity and experimentation. Furthermore, early professionalisation meant that players had very limited options to interact with other people and realities beyond the 'academy bubble'.

7.4.3. Concept 3. Resistance from the material of interest

This principle reflects on the potential benefits and downsides that arose from the challenges and frustrations faced by young players, as well as how their (lack of) engagement with diverse materials – and buildings - may contribute to (or not) creative development. A total of two themes emerged from the analytical process and are summarised in table 8.

Table 8: Summary of themes relative to resistance from the material of interest

Sensitizing concept	Themes
Resistance from the material of interest	The impact of material and environmental constraints on creative development
	The importance of managing challenge for creative development

7.4.3.1. The impact of material and environmental constraints on creative development

The club's modern academy, set in a remote location on the outskirts of the city, and protected by high fences and security guards, was only accessible to the public on match days. On training days, parents were only authorised to enter the reception area to drop off their children and use the cafeteria, which had no view

to the training area. Adult participants – inclusively all parents interviewed – agreed that the architecture of the building provided an element of privacy that shielded players and staff from unwanted pressure.

Additionally, while conducting my research at the academy, I noticed how players' passion about football resulted in them perceiving and acting on creative affordances with unusual materials. They did it not only at training ("I see players getting excited about doing bicycle kicks and start using 33cl water bottles to attempt them" [Field notes 08/04/19]) before and after training sessions, but also at home: "[my son] makes a ball with anything, with socks, with newspapers, with papers, a can from the street. He has always kicked everything he saw [Parent 1]." Players also benefited from having a wide range of playing areas with different sizes and surfaces freely available at school, council facilities, near their homes ("There's a football pitch next to my house, made of gravel." [Player 5]) or even in their back-garden ("my house has a bit of land, they [sons] can play there and in the Summer they both play a lot there." [Parent 2]) Each of these different facilities and surfaces represented different constraints for the young players to explore.

Curiously, while adult participants commented on the importance of the privacy element conferred by the academy's modern architecture to promote risk-taking, during informal conversations with players and interviews with some adult participants, there were suggestions that the greatness of the building could have a negative effect on creative learning:

> "I can understand that this building can leave young players to feel that pressure, of being in this academy." [HAC]
>
> "The greatness of the academy can affect them [players] emotionally. In that sense, I think the adaptation to the academy is not easy" [HC]

Furthermore, although the building possessed numerous functionalities adapted to the requirements of modern football such as multiple pitches, offices, meeting rooms, restaurant/cafeteria, fully equipped gyms, studying and medical rooms, there were no spaces where children could engage in exploratory behaviour with their team-mates while waiting for their training session. Some spent hours sitting if they attended the club's partner school.

> "Being in an academy from an early age takes away some of the skills that were only learned on the street, the irregularity of the surface, knowing how

to fall, playing with an irregular ball, the surface, playing against older opponents (…) Today, they [the players] practice in top facilities, natural grass pitches, artificial pitches of the latest generation, they have access to machines, top changing rooms. We gained some things but lost others." (HAP)

Thus, although all interviewees emphasised the importance of informal practice for creative learning and player development overall, the academy offered no material opportunity for it. Similarly, while immersed at the academy I witnessed another type of environmental constraints on creative learning. During a training session, a sudden storm resulted in heavy rain and freezing cold, which made players clearly uncomfortable – some were even shaking – leading coaches to end the session earlier than planned:

"I also notice how the weather makes a big difference on how the players are able to express themselves and how this sunny climate is so much more inviting for trying tricks and skills than the rain we have experienced the other day [during a previous training session at the academy]" [Field notes, 10/04/19]

7.4.3.2. The importance of managing challenge for creative development

The academy I was embedded in was one of the best in Portugal. It managed to recruit talented players not only from all over the country but also internationally. However, until the age of 14, players competed in regional leagues, where they were generally much better than their opponents. To foster competitive balance, the club had registered the under-13 team in the second-tier of the regional under-15 league. The HAC explained that by registering teams in leagues above their chronological age-groups, the club tried as much as possible to provide players with an optimal level of challenge. All players reported that they liked playing against older players on the regional league matches. They felt such challenge resulted in significant improvements:

"What do you think about playing against under-15s? [FF]

It's good because we learn [Player 1]

It's good because we evolve. [Player 4]

We learn faster!" [Player 3]

Coaches agreed that overall the players benefited from having a high level of challenge. Additionally, coaches believed that they had a key role in managing the level of challenge. In that vein, maintaining task-focus and competitive balance were the main premises for difficulties to become opportunities for creative development:

> "I don't want to win the league, what I want is the players to give their best, that we can take something out of the game. If they give it all, if they can show what they know and everything that we work on, that's much more enjoyable than staying on our age group and beat every team by large margins." [HC]

Adequate match preparation was also deemed essential to ensure players could benefit from challenging experiences. Fostering a process-focused mindset was the priority:

> "[The way players interpret difficult challenges] depends much on the feedback you give them, depends a lot on what you tell them beforehand, before matches and before training. If we focus on what we do, I think that [high challenge] can help them. The difficulty will be higher. Honestly, with the quality that they have, playing against kids of their age here in the region, they wouldn't need to be very creative, they would be creative almost by cliché...[playing against older players] maybe forces them to be more...not thinking about creativity as only dribbling. If creativity is about deciding, if it is about passing the ball and getting it back ahead, if creativity is having to tackle because I am slower, it helps. I think it does." [AC]

Notwithstanding, parents – such as Parent 3 - revealed that at times they considered the challenge their children faced could be excessive, especially with regards to physical differences between the different teams: "Sometimes I am scared because of the size differences [between players], I fear for their physical well-being, because really at age 15 there are players who have a much higher physical ability, they're men."

Having observed several matches – regional league and international tournament – I noticed that at times the level of physical (playing against older teams with a majority of stronger, taller players) or tactical-technical challenge (playing against opponents within the same age group but with much larger experience, inclusively internationally) was so high that the team ended up

focusing almost exclusively on defending and maintaining team shape to achieve competitive balance. Avoiding mistakes became a priority, and there were fewer opportunities for improvisation or risk-taking:

> "Football is getting more and more physical. In youth football, normally who has more strength usually wins the matches." [Player 3]
>
> "Do you think you felt pressure playing against club X? [FF]
>
> Yes, but that's already usual. [Player 4]
>
> We even have a better team than them, but we started the match thinking about their shirts [Player 3]
>
> [We weren't creative] because their players are much better than us." [Player 1]

In resume, children engaged with many different materials to develop their skills and played on numerous surfaces of varying sizes, which meant they had to constantly adapt to different constraints, resulting thus in multiple creative affordances. Weather also impacted on children's ability and willingness to express their creative potential. On a different note, providing children with a balanced, flexible level of challenge was deemed important for creative development. Indeed, it appears that too little challenge may result in complacency and limited development of creative potential. In turn, too much challenge may lead to risk-avoidance, frustration and disengagement with the game. Finally, the academy's state-of-the-art infra-structures provided them privacy to train and play, shielded from parental pressure, which enhanced risk-taking.

There were no spaces for informal, children-led play, which restricted opportunities for inquiry learning and exploratory behaviour. Additionally, the greatness of the building appeared to represent an unintended source of pressure for some young players to perform. This meant they focused on conforming to immediate expectations and avoiding mistakes, which could limit their creative development.

7.5. Discussion

The aim of this study was to identify and investigate challenges and opportunities for creative development in a Portuguese professional football academy, including relevant stakeholders like coaches and parents. In the past two

decades, research on sporting creativity has grown exponentially (Memmert, 2010) with a plethora of methods, strategies, and programmes being proposed for its development (Fardilha & Allen, 2019). While such developmental processes do not occur in neutral environments, little research has thus far explored how environmental and organisational influences may affect processes of creative development in sport. Such studies are necessary as the situated and distributed nature of creativity becomes generally recognised (e.g. Glăveanu et al., 2019). Thus, it is important that investigations of sporting creativity are contextualised, admitting that it may occur differently across various domains, i.e. participation or performance-oriented. In that vein, the present study focused on a Portuguese professional football academy, positioned in the youth elite (FIFA, n.d.) domain. These organisations differ from grassroots setups, as unlike the latter they are not available to a wide population and combine commercial interests with the development of football talent.

To date, no study had undertaken a multilevel approach to the investigation of creative development in football academies. Therefore, how different stakeholders, at different levels, may impact positively or negatively on the creative development of young academy players remained unknown. The present study aimed to address that gap, using Tanggaard's (2014) situated model of creative learning, to examine several challenges and opportunities for development. Indeed, the model helped to expose a complex web of interactions and often conflicting interests within the academy wider ecosystem, i.e. including players' families, that appear to play important roles in the (non-)expression of creative potential.

7.5.1. Parental involvement in football academies: problem or solution?

Despite their young age, all players of the academy's under-13 team had already accumulated solid and extensive domain-specific knowledge. This is one of the premises for the acquisition of expertise (Ericsson et al., 1993), which is considered essential for creative learning (Tanggaard, 2014). Players were passionate about football and treated it as a (or perhaps 'the') top priority in their lives, with some relegating school to a secondary position. Thus, despite reports of increasing levels of sedentariness and decreased physical activity among children and young populations, often related to digitalisation (Santaliestra-Pasías, Rey-

López, & Moreno Aznar, 2013), players were very engaged with sport, and football in particular. They played it in a myriad of formal and informal spaces and surfaces, in the company of team-mates, friends, and family. Moreover, players were part of a context in which football was deeply embedded, part of daily life (Coelho & Tiesler, 2007), benefitting from parental engagement with the sport, as well as frequent access to live and broadcasted football matches.

However, parental behaviour was largely characterised by the involuntary imposition of pressure on young players to perform and achieve professionalisation. It emerged as a very significant threat to the sustained engagement of these players in their sport, with the potential to lead to their disengagement, and even early drop-out. Although hitherto largely unaddressed in sporting creativity research, my findings are very much aligned with earlier research on the impact of parental involvement in sport conducted by sport psychology scholars (e.g. Knight, Berrow, & Harwood, 2017; Bremer, 2012). For example, Amado and colleagues (2015) found that parental pressure was a negative predictor of the satisfaction of young athletes' basic psychological needs. This is problematic, given that motivational orientation, and especially intrinsic motivation have been considered fundamental for creativity to emerge (Hennessey, 2019; Amabile & Pratt, 2016). The Portuguese context, where football is an important part of daily life - with three daily newspapers dedicated to the sport and the biggest clubs' training sessions reported in every news show –, and the history of successful player transfers from national academies, may contribute to parental illusions of future professionalisation of their children and limit opportunities for risk-taking, and consequently, for creative development. Albeit worrying, these dramatic illustrations of parents who see their children's sporting careers as sources of financial sustainability and social progression, "represent the minority of parents [and] do untold damage to perceptions of youth soccer parents and, most critically, the experiences and development of young players" (Knight & Newport, 2020, p.121). Indeed, especially at young ages parents are primary sources of support for children's sport participation at multiple levels (Dorsch, Smith, & Dotterer, 2016), investing emotional, financial and logistical resources (Harwood, Drew, & Knight, 2010).

Furthermore, in the context of professional football academies, parents may be especially important as 'agents of moderation', responsible for managing and

mitigating the stress and disappointment of their children's 'broken dreams', associated with a likely premature release (Harwood, Drew, & Knight, 2010). This is also relevant for creative development, for example due to the importance of expertise for creative learning (Tanggaard, 2014) Thus, while the distancing between academy staff and parents may be understandable due to unpleasant past experiences, it is essential that parents are recognised as "key social agents in their child-athlete's development" (Harwood et al., 2010, p.53). In that vein, future research should explore further the parental impact on creative development in sport, e.g. via tripartite interventions including club staff, parents, and young players. Additionally, findings from this study suggest clubs could attempt to establish more effective avenues of collaboration and communication with parents. Indeed, instead of assuming that parents need to 'be educated', academies could create parent representative roles across each, or some age groups, integrating these as consultants in relevant decision-making and policy-shaping processes.

7.5.2. The importance of gaps for experimentation in football

After one year of fieldwork in a vocational learning setting, Tanggaard (2008; 2014) found that much of student experimentation and inquiry learning happened during breaks or in spaces where they could play freely. This was consistent the experiences of academy players, who tended to take more risks and try new things when they were not taking part in primary training tasks, or when they had school breaks and days-off. As Tanggaard (2014) suggests, "much learning takes place in the context of crossing boundaries of moving between spaces; (...) gaps are ideal places for experimenting with that which is taught during school" (p.111). However, sporting creativity researchers have thus far focused on formal training and competitive settings. For example, Bowers and colleagues' (2014) study on the relationship between youth sport participation settings and creativity in adulthood was based on the analysis of participants' sporting activities, which accounted for only 30% of the total leisure time of participants. No information was provided on what they did during the remaining 70% of the time and what impact this may have had on creativity development.

With regards to practitioners, although academies play a fundamental role in allowing young players to become immersed in domain-relevant knowledge

and develop football expertise, organisational leaders should resist the capitalist-inspired tendency to pursue maximum efficiencies (Rasmussen et al., 2020b), path dependency, and precise performance monitoring (Vaughan et al., 2019). They should instead encourage young players to seek less judgemental, more collaborative environments (Vaughan et al., 2019) outside the academy boundaries, where they can try new things and create without the fear of making mistakes.

In a similar vein, the notion that gaps may be more effective for creative learning than 'creativity on command' (Tanggaard, 2014; Levin, 2008), i.e. when children are invited 'to be creative', presents an opportunity for practitioners and scholars to reflect. In a recent action research project conducted with an under-17 Danish elite football academy team, Rasmussen and colleagues (2020b) introduced over the course of several weeks a variety of purposefully-designed creativity exercises that were delivered during training sessions. They reported that the intervention had limited success, which they attributed to the resistance of players and coach to embrace opportunities to lose control and suspend judgement during these tasks: "coaching for creativity is an ambiguous task which may require doing the opposite of what is normally done to enhance performance." (2020b, p.27) However, considering the responses from participants in this study, it could be argued that so-called 'creativity training' may itself be a form of 'creativity on command'. Thus, it may offer limited value to academy settings, where creativity is generally not yet be perceived as a developmental resource (Rasmussen et al., 2019), and where players describe feeling limited psychological safety and autonomy to explore.

7.5.3. The importance of leadership for creative development

Leadership and management are essential features of organisational creativity. Indeed, Mumford and colleagues (2019) explain that "the complex nature of creativity and innovation in real-world settings has an important, albeit often overlooked, implication – creativity in the "real-world" requires leadership" (p.546). Reiter-Palmon and colleagues (2019) suggested that "a leader who constructs a psychologically safe environment is genuinely supportive of creative efforts, and safe expectations for employees to be creative, is the leader an organization should consider for a creative role" (p. 520). However, in the

academy investigated in this study, senior leadership members – i.e. club chairman, academy director - were often pointed as sources of pressure and stress. Consequently, staff perceived their jobs were permanently in danger, which led them to avoid risk-taking and mastery goal-orientation. This is problematic given that mastery-orientation has been found to have a positive effect on creativity (Anderson et al., 2014).

The adoption of an integrative transdisciplinary approach (Montuori, 2019) allowed me to explore the multilevel complex situated nature of creativity and its development. Findings were consistent with perceptions of HACs and HARs in study 1, reinforcing that creativity, at least in football academies, is much more than a simple training matter, as may be suggested by the development of training programmes (e.g. Santos et al., 2016). Instead, in line with Tanggaard's (2014) suggestions, while teachers and role models are valuable for creative development, the enhancement of creative potential and its expression should be conceptualised as a broader, non-linear learning process. This process emerges from the interactions between multiple stakeholders and the material resources that compose that ecosystem, and is permeable to external influences like economic policies/orientations. In that sense, the perceived short-term, result-oriented approach of senior leaders may well not be voluntary, but a consequence of them being trapped "in the clubs' rat race to increase salaries and transfer fees and thus to improve club competitiveness" (Rohde & Breuer, 2017, p.284) that characterises contemporary professional football. Future research should investigate in more detail the effects of various leadership approaches on creative development in sport.

The highly pressurised environment that characterised the academy resulted in a focus on immediate outcomes and ready-made solutions. For example, players that were already fully matured were regularly preferred to late developers who struggled to express their potential against more athletic opponents. This is in line with a growing body of research on the prevalence of relative-age effect in talent identification and development in youth elite football (Sarmento et al., 2018). Furthermore, the existence of pre-defined profiles, i.e. strict guidelines of how a player 'must look' in order to be marketable (e.g. in relation to height) contrasts with dynamic conceptualisations of creativity (Glăveanu et al., 2019). It is a symptom of short-term thinking, given that the whole developmental process

oriented for the satisfaction of the wants and needs of current buyers, ignores the difficulties associated with predicting how football – and creativity – will look like in 10 years' time, and thus which 'type' of players may be required by then.

The adoption of exclusionary policies at young ages seemed to ignore not only the multidimensionality, but also the non-linearity and discontinuity of talent (Baker et al., 2017) and creative development processes (He & Wong, 2015). Ironically, these profiling practices may contribute importantly to the report phenomenon of homogeneisation and consequent decrease of creativity in youth football that the vast majority of study 1 participants lamented. Longitudinal studies could shed more light on this issue. In more practical terms, the adoption of constraints-led approaches (Renshaw et al., 2019), inspired by ecological dynamics (Araújo, Davids, & Hristovski, 2006) could provide a viable contribution to a much-needed celebration of individual and environmental uniqueness. Not only inspiring the coaching methodology but as a more global, systemic way of thinking that could encapsulate the whole organisation and related stakeholders.

7.5.4. Resistance and emotions

The third principle for creative learning proposed by Tanggaard (2014) dismisses traditional romanticised conceptualisations of creativity, emphasising instead the importance of human-material interactions and negative experiences for growth. With regards to materiality, young players appeared to take every possible opportunity to develop their football skills, not being restricted to official-sized pitches or balls. Instead they played in different surfaces (e.g. multi-use and gravel pitches) and used plastic bottles, socks, or scrap paper as replacements for footballs. Such engagement is in line with suggestions that changes in material constraints open new possibilities for creative expression in sport (Tanggaard, Laursen, & Szulevicz, 2016). It also exposes the relational, interdependent nature of Tanggaard's (2014) creative learning principles: "the resistance is only felt if one dares to engage in immersion in the material, and if an experimenting kind of inquiry is allowed" (p.112).

However, the present investigation also revealed that for some players the brand new, state-of-the-art academy building limited their ability for creative expression, generating negative emotions, e.g. stress and anxiety. Although

research on the impact of physical environments on creativity is still limited, Dul's (2019) 'triple path framework' establishes a relationship between the physical environment and creativity, mediated by functionality (i.e. instrumentality, adaptability, and prevention of distractions), meaning (i.e. freedom, inspiration, interaction, privacy, and relaxation), and mood (positive and/or negative activation). In the case of the club's academy, the building met most functional elements – namely instrumentality, and prevention of distractions -, but with regards to meaning it appeared that young players associated it more with the pressure of early professionalisation than with freedom or privacy.

In relation to the importance of difficulties for creative learning, all participants admitted that a high level of challenge was necessary and desirable for player development, but accepted that in some circumstances excessive difficulty could result in player demotivation and disengagement. Therefore, in line with Ericsson and colleagues' (1993) findings regarding the acquisition of expertise and Vygotsky's (1978) notion of 'zone of proximal development' for more effective learning, my investigation in the Portuguese football academy found that a balanced approach to the use of challenge and competition is essential to promote successful creative development.

7.6. Conclusion

The present study, in which I was immersed in a professional football academy, provided support to many of the findings of study 1, e.g. suggestions that creative development is dependent on a web of interactions between numerous stakeholders. Thus, while professional academies and researchers are still very much focused on the development of individual traits and skills (Fardilha & Allen, 2019), it is clear that the adoption of a 'We-paradigm' to conceptualise and promote creativity in football is very useful if we are to address the complex nature of the construct. In that vein, creative development should not be treated as a teaching or coaching process but instead as a broader, non-linear learning process, dependant on multiple interactions between a myriad of stakeholders and across different formal, informal, socio-cultural and material environments.

Additionally, this study showed that integrative transdisciplinary approaches can lead to more inclusive research, e.g. through the inclusion of young players'

perspectives. Such inclusion may contribute to a more accurate evaluation of interventions or programmes dedicated to the enhancement of creative development, since it allows for the comparison of coaches/researchers and players' perceptions. Furthermore, the simultaneous contemplation of multiple levels of analysis allowed for a better understanding of interdependencies that can impact creative development, e.g. how unequal salary structures and perceptions of job insecurity of academy staff can lead to risk avoidance and to limited opportunities for late developers.

Finally, the promise of Tanggaard's (2014) situated model of creative learning for investigations of sporting creativity was confirmed. Indeed, the use of its principles as sensitizing concepts provided a meaningful platform for the identification and discussion of challenges and opportunities for creative development in the professional academy.

Chapter Eight: ‘Life is not only about football, right?’ A biographical case-study of Bernardo Silva’s developmental journey

8.1. Introduction

"And one fine day the goddess of the wind kisses the foot of the man, that mistreated, scorned foot, and from that kiss the football idol is born"

(Galeano, 1998, p.5)

In the previous chapter, I proposed that creative development should move beyond training/coaching strategies to be conceptualised instead as a wider learning process. This suggestion was based on evidence gathered in a Portuguese professional academy, and built upon earlier work on perceptions of creativity from HACs and HARs across 10 academies in three different countries. The present study aims to further our understanding of creative development by moving away from the conceptual, prospective study of sporting creativity and applying a retrospective lens to analyse and discuss it. Approaching the construct from various angles is important, given that creativity has been recognised as complex, and multi-dimensional (Kurtzberg, 2005). Furthermore, in opposition to seminal research on talent development (e.g. Bloom, 1985), research on eminently creative sporting figures is almost inexistent – except for Martin and Cox's (2016) work.

In that vein, studying the developmental path of Bernardo Silva across an extended amount of time (throughout childhood, adolescence, and early adulthood), from a socio-cultural perspective, that frames creativity as a dynamic, situated, distributed, and relational phenomenon (Lebuda & Glăveanu, 2019) is important. This is because it may lead not only to a mitigation of the 'lone genius myth' (Montuori & Purser, 1999), but also to a better understanding of how the interactions between different stakeholders across various environments (sporting and non-sporting) can result in consistent, highly effective expression of creative potential in football.

Similarly to study 2 (chapter 7), I will use Tanggaard's (2014) situated model of creative learning in my investigation of Bernardo Silva's developmental journey as a theoretical framework to support my analysis. In brief, this model posits that there are three central principles for creative learning in any community. These are immersion in the topic of interest, in traditions, and in the subject matter, which emphasise the importance of domain-specific knowledge, activities, and culture for creative learning; experimentation and inquiry learning, which reflects on the benefits of curiosity, intrinsic motivation, and risk-taking for

creativity, simultaneously highlighting the key role of breaks and gaps; and resistance from the material of interest, a principle that refers to the interactions between humans and their environment, and how experiencing resistance and engaging with it can contribute to the emergence of creativity. If study 2 (chapter 7) confirmed the usefulness of the Tanggaard's (2014) situated model to study creative development in *live*, academy settings, the current study will probe its capacity to adequately explain retrospective sporting creativity at its highest, eminent level.

8.2. Genius, creativity, and eminence

'Genius' is a word often used in the football milieu to distinguish its most creative stars: players like Johann Cruyff (Lechner, 2007), Paul Gascoigne (Giulianotti & Gerrard, 2001), Ruud Gullitt (Harris, 1997), Lionel Messi (Balagué, 2013) or even coaches like Sir Alex Ferguson (Taylor, 2011) and Pep Guardiola (Ferdinand, as cited in Lea, 2019) have been given that distinction. A recent addition to such selective group is Portuguese international and Manchester City player Bernardo Silva.

Defined as an unusual combination of "guile and creativity" (Edwards, 2019), Silva is recognised not only by his coaches and team-mates but also by opponents and independent observers across the globe. Manchester City's manager Pep Guardiola described him as the best English Premier League (EPL) player of 2018-19, explaining that "Bernardo can play incredibly well everywhere, (...) he does everything with the ball" (Guardiola, 2019). In turn, team-mate and French international Benjamin Mendy described Bernardo as football's "Pablo Picasso, that's how good you are" (Mendy, as cited in Augustus, 2019). UEFA technical advisors elected Bernardo Silva as the 2019 Nations League Player of the Tournament, ahead of high-profile stars like his compatriot Cristiano Ronaldo. Moreover, Sky Sports pundit and former Liverpool FC star Jamie Carragher named the Portuguese as "one of the top players in Europe (…)" (as cited in Bate, 2019). In 2018, the multi-national sports clothing brand Adidas chose Bernardo as the protagonist of its commercial campaign titled 'Creativity unites us'.

As discussed in chapter 2, genius was commonly attributed to external, divine influences until the Renaissance. (Montuori & Purser, 1999) However, after that period it started to be associated with intra-individual properties and genetic

endowment (Becker, 2014). No matter its source, genius was considered an exclusive characteristic of the individual – the 'lone genius' (Montuori & Purser, 1999) -, who was almost always male and created in isolation (Glăveanu & Kaufman, 2019). Scholarly interest on eminent creators in different areas can be traced back to ancient civilisations (Glăveanu, 2010a), but it has become more systematically studied after Francis Galton's (1869) publication of *Hereditary Genius* (Simonton, 2019). Since then, the lives of creative individuals across different historical periods have merited significant attention from scholars (e.g. Freud, 1910; Cox, 1926; Erikson, 1958; Gruber & Barrett, 1974; Gardner, 1993). Research on genius and eminence has traditionally focused on a reduced number of domains, e.g. science, philosophy, and the arts. (Simonton, 2019)

In 1993, Gardner's work on multiple intelligences (1993a) – i.e. naturalistic, visuospatial, inter- and intra-personal, linguistic, bodily-kinaesthetic, logical-mathematical, and musical – was coupled with the publication of 'Creating minds' (Garden, 1993b). The book included the biography of acclaimed American dancer and choreographer Marta Graham among more traditional figures like Albert Einstein, T.S. Elliott, or Pablo Picasso. Simonton (2019) justifies the limited study of the lives of people who excelled within the so-called bodily-kinaesthetic domain (Gardner, 1993a) with the 'ephemeral' nature of their products: "even if creators in these areas can become highly eminent in their own lifetime that eminence dissipates quickly with the passage of time." (Simonton, 2019, p.657) Such perspective would position football players as producers of ephemeral creativity, since the sport is mostly associated with real-time improvisation and problem-solving (Harrison, 2016) during training sessions and matches. Notwithstanding, it could be argued that the immense popularity and impact of football across the planet (Hughson, Moore, Spaaij & Maguire, 2016), together with phenomena of mythologisation of its biggest stars (Giulianotti, 1999), may lead football players and their creations to sustain Simonton's (2019) 'test of time'.

8.3. Creativity and the 'sporting genius'

During the last four decades some scholars have attempted to gain a better understanding of the developmental journeys of top sporting performers (e.g. Bloom et al., 1985; Hornig, Aust & Güllich, 2014). However, the number of in-depth studies conducted with world-class, 'super-elite' performers is still limited

(Rees et al., 2016). ‘Super-elite’ athletes are described by Rees and colleagues (2016) as those who achieve the pinnacle of their sports, winning medals and/or trophies at the most important competitions on a global scale (e.g. World championships, Olympic Games).

Curiously, in a study with World and Olympic champions almost two decades ago, Durand-Bush and Salmela (2002) found that creativity was a common characteristic among these top-level athletes. They posited that “research should examine the role of creativity and innovation in the development and maintenance of expert performance, and their potential contribution to flow experiences” (p.166). However, while some studies have made reference to exceptional creative moments in high level sport – e.g. Aggerholm, Jespersen and Ronglan’s (2011) contextual analysis of Diego Milito’s ‘man-of-the-match’ performance during the 2010 football Champions League final –, to my knowledge only two investigations examining creativity and the developmental pathways of super-elite athletes have thus far been conducted (Martin & Cox, 2016; Richard, Abdulla, & Runco, 2017).

In a study which aimed to explore how sport skill level, diversification, experience, and number of accumulated hours of training impacted on measures of everyday creativity, Richard and colleagues (2017) asked a sample of 208 athletes from 17 different sports (including 114 world-class and Olympic athletes) to complete a number of tasks belonging to Runco’s (2011) Creative Assessment Battery. These included measures of divergent thinking, creative attitude values and creative personality, as well as the completion of a ‘creative activity and accomplishment’ checklist. The authors found that those athletes positioned at the highest level of the expertise continuum, i.e. world-class and Olympians, significantly outperformed intermediate and non-experts, especially with regards to measures of cognitive flexibility.

In turn, Martin and Cox (2016) investigated the childhood and adolescence experiences of Steve Nash, a Canadian basketball legend, by conducting a life-positioning analysis involving the examination of primary (interviews with Nash himself, his father and brother, former coaches and teammates) and secondary sources (print and online articles). As a result, they found that much of Nash’s creative achievements could be related to opportunities for self-expression and self-determination, goal-setting, resilience, and passion that he was able to

develop throughout his early years through interactions with significant others. Thus, more than simply a result of exceptional intra-individual skills, Martin and Cox (2016) argued that "when these interactions and exchanges are set within the broader context of the sociocultural values, practices, and traditions of personhood and athleticism in which they unfolded, a developmental trajectory emerges that provides a plausible explanatory account of some important aspects of Steve's athletic creativity and drive" (Martin & Cox, 2016, p.397).

Such perspective of creative eminence as a result of a distributed, developmental process is in line with Pickering and Negus' (2004) suggestion that whilst celebrating outstanding achievements remains important, deterministic notions of genius as something reserved to special individuals are outdated. Thus, as demonstrated by Nash's LPA, there is potential for the concept of 'genius' to be reframed in line with more recent conceptualisations of creativity informed by (socio-)cultural psychology, which emphasise its distributed, situated, and relational nature (Glăveanu, Tanggaard & Wegener, 2016). In that vein, the current study aims to contribute to that effort of re-conceptualisation by presenting and discussing Bernardo Silva's developmental path, using Tanggaard's (2014) situated model of creative learning (see chapter 7) as an analytical lens.

8.4. Method

8.4.1. Research design

It has been suggested that analysing the lives of eminent creators may provide useful insights into creative 'greatness' (Kaufman & Beghetto, 2009). Different methods have been proposed for the study of genius and eminence, like historiometrics (Simonton, 1990) and psychobiography (e.g. Freud, 1910), which mirrored contrasting philosophical paradigms. On the one hand, historiometrics is a "scientific discipline in which nomothetic hypotheses (i.e. relative to the discovery of general scientific laws) about human behaviour are tested by applying quantitative analyses to data concerning historical individuals" (Simonton, 1990, p. 3). Examples of historiometric works are Cox's (1926) investigation of 300 eminent personalities from varied areas like art, literature, and music, and Simonton's (1992) examination of the social contexts surrounding 2,026 successful scientists and inventors.

On the other hand, psychobiography can be defined as the critical application of psychological theory to the study of individual lives (du Plessis,

2017; Simonton, 2019). Its goal is to "shed light on motives, emotional dynamics, relational strategies, or unconscious gestalts of thought and feeling, on the inner, subjective origins – often obscure to creators themselves – of publicly shared products or life events" (Schultz, 2014, p.20). Furthermore, psycho-biographical investigations recognise the impact of interactions with socio-cultural, historical, and other contextual factors on individual personality. Among the most cited psycho-biographical works are, for example, Freud's (1910/1964) analysis of Da Vinci's childhood and Runyan's (2005) examination of the reasons underpinning Van Gogh's decision to cut his own ear off.

During the greater part of the 20th century, psycho-biographies were often considered of limited scientific value, due to its links to Freud and psychoanalysis (Kőváry, 2011; du Plessis, 2017). Some scholars continue nowadays to privilege nomothetic - e.g. historiometric – approaches over psycho-biographies, arguing that the latter's "exclusive reliance on qualitative and idiographic methods raises issues of both scientific replicability and generalisability" (Simonton, 2019, p.656). Notwithstanding, Schultz (2005, p.5) claims that "if we wish to discover why someone did what she did or how she became what she became, or what drives her, then what we need to do is step out of the lab and into an existential context".

Similarly to psycho-biographies, case-studies have also earned a bad reputation with regards to reliability and rigour (Yin, 2018). This is because they too carry an interpretative element, which necessarily entails subjectivity. Nonetheless, Yin (2018) explains that case-studies are becoming increasingly popular within and outside academia, due to their flexibility and proximity to the 'real-world'. Researchers conducting case-studies, and especially holistic designs, must follow a methodic, systematic, and transparent process, being clear about their procedures (Yin, 2018; MacQuarrie, 2009), so that their work becomes "worthy of the audience's attention" (MacQuarrie, 2009, p.443).

Whilst still limited within the field of sporting creativity, biographical case studies are "likely to add both shared and unique insights into the multifaceted and highly complex patterns of development and learning associated with the attainment of athletic accomplishment at the highest levels" (Martin & Cox, 2016, p.397). After adopting an instrumental case-study approach in study 2 (see chapter 7) to investigate creativity from a multi-level perspective within an organisational

setting over one month, the present study also adopts a case-study design, albeit now using a holistic (MacQuarrie, 2009), intrinsic (Stake, 2005; Hodge & Sharp, 2016) approach to examine the developmental path of 'super-elite' football player Bernardo Silva, from childhood until his international club debut with AS Monaco. The holistic approach within the intrinsic frame is represented by the adoption of a social ecological approach to study a particular case, "wherein the person is the focus but also the person's relationships with family, with other organizations, and with other institutions of culture" (MacQuarrie, 2009, p.442), e.g. school, club. This in line with earlier work on talent development (e.g. Bloom, 1985; Henriksen, Stambulova & Roessler, 2010) and sporting creativity (Martin & Cox, 2016). Moreover, holism is especially important for single-case, intrinsic studies, since it "contributes to the overall coherence of the understanding that emerges from the triangulation of diverse perspectives on the particular case" (MacQuarrie, 2009, p.442).

Since the present study aims to examine a single life – that of super-elite footballer Bernardo Silva –, while exploring the influence of socio-cultural surroundings on his creative development, I have deemed appropriate to borrow partially from du Plessis' (2017) step-wise approach to conducting a psycho-biography as a guide for the data collection, analysis, and verification stages of my case-study. This approach is constituted by 12 steps: (1) select a subject; (2) identify primary and secondary sources relating to the subject. Critically evaluate the potential usefulness of these source; (3) identify the context in which the subject lived, and determine the amount of contextual data that is needed for the psychobiography. Access this data; (4) select an appropriate psychological theory/theories; (5) allow the data to reveal itself by using Schultz's markers of psychological salience; (6) ask the data specific questions relating to the subject being studied; (7) develop coding strategies and code the data accordingly; (8) select display formats (9) integrate coding with display; (10) write up of psychobiography; (11) revision of psychobiography in relation to specific questions developed previously; (12) evaluation of research process.

Although the current study is not a psychobiography, I argue that du Plessis' (2017) work still holds value for broader biographical case-study research for three reasons: firstly, it is purposefully-designed for biographical research; secondly, it places emphasis on "quality, rigour, and ethics" (2017, p.219); and

thirdly, it is flexible, accounting for the non-linearity of the research process: in reality the steps may overlap or occur in a different order, with each specific project crafted in a unique manner (p. 217). In that vein, I have adapted the step-wise approach by removing step 5, which is only relevant for traditional psycho-biographies.

8.4.2. Participants

8.4.2.1. Bernardo Silva: the player

Born in Lisbon, Portugal, on the 10th August 1994, Bernardo Mota Veiga de Carvalho e Silva (BS) is a Portuguese international football player, currently contracted by Manchester City, an English club competing at the country's top-tier, the Premier League. Bernardo joined SL Benfica's football school at 7 years of age, in 2001, before moving to the club's competitive setup during the season 2002/2003. Until being promoted to the club's 'B' team, which competed in the Portuguese second professional tier, in 2012/13, Bernardo won three national trophies with Benfica's youth teams, with the under-15s (2008/09), 17s (2010/11), and 19s (2012/13). After his debut with the 'B' team, on the day of his 19th birthday (10 August 2013) against Trofense, Bernardo went on to play 38 matches, scoring 7 goals, and being elected the league's '2013/14 Best Newcomer' He won twice the overall 'Player of the Month' distinction. Bernardo was also called to the first team for three occasions, playing a total of 31 minutes under manager Jorge Jesus, before signing a loan agreement with French Ligue 1 club AS Monaco at the end of the season. During his first season in France (2014/15), Bernardo took part in 45 matches (3015 minutes) across four different competitions – Ligue 1, Champions League, French Cup, and League Cup – and scored 10 goals. His performances convinced the sporting director Luís Campos to pay €15.75M to Benfica to sign Bernardo on a permanent deal.

After achieving two third-places with AS Monaco in 2014/15 and 2015/16, Bernardo's third season with the club was the most successful: he took part in 58 matches, scored 11 goals, and was a key contributor to Monaco's league title and to the club's excellent Champions League campaign, losing only in the semi-final against Italian champions Juventus. Bernardo's energetic and creative displays caught the attention of Manchester City and manager Pep Guardiola, leading the English club to invest €50M to sign the Portuguese player on a permanent contract

from 2017/18. Since then, Bernardo has played with the 'citizens' for three seasons, taking part in 146 matches (as of the 23rd June 2020) and scoring 29 goals. He has won two Premier League titles (2017/18 and 2018/19) and was elected 2019 Player of the Year at Manchester City. In the same year, he was also selected for the Professional Footballers' Association (PFA) Premier League Team of the Year, voted by the league's players.

With regards to the Portuguese National Team, Bernardo was first called up to the under-19s team in February 2013, making his debut in a 1-1 draw with Sweden at the La Manga Tournament in Spain. He went on to play in the 2013 Under-19 Euro Championship in Lithuania, being selected for the tournament's Best XI. An accolade that he received once again two years later, in the Under-21 Euro Championship played in the Czech Republic. After 13 caps with the Portugal's under-19s and 14 with the under-21s, Bernardo Silva made it to the first team at the end of August 2017, playing against the Faroe Islands in the 2018 Russia World Cup qualifier. He was part of the Portuguese squad that reached the last 16 stage in Russia and also took part in the 2019 UEFA Nations league final-four tournament, played in Portugal. Bernardo's decisive contribution to the Portuguese triumph on home soil was recognised by UEFA, which awarded him the trophy for the Best Player of the Tournament. As of June 2020, he had 43 caps with Portugal's first team.

8.4.2.2. Maria João Mota Veiga: mother

Born in Lisbon, Maria João Mota Veiga (MJV), Bernardo's mother, is both an art and football fan, who throughout childhood attended Sporting CP's matches at José de Alvalade stadium with her grandfather. She completed an undergraduate degree in History with a specialisation in Art History, and holds two postgraduate degrees: one in Art Curatorship and another in Communication, Contemporary Culture and New Technologies. She has been working at Lisbon Fashion School since 1991, lecturing History of Fashion, Art History and Culture, Fashion Psycho-sociology, and Formation of Taste. MJV has also coordinated and produced fashion shows, conducted historical research for theatre plays, and written scripts for television programmes about fashion.

8.4.2.3. Colégio Valsassina: the school (5th to 11th grade)

Located in Lisbon, Colégio Valsassina was first created as a primary school in 1898 by Susana Duarte. After her marriage with Frederico Valsassina in 1907, the school started to welcome older students for private tutoring, but its continuous growth was halted due to the economic consequences of World War I. Since its reopening in 1919, and especially after moving to a former palace, Colégio Valsassina became known in the Portuguese capital for its innovative teaching methods and non-religious, humanistic philosophy. Nowadays, the educational project of this private institution continues to promote a holistic approach, focused not only on the development of cognitive capacities, but also on modern citizenship and solidarity, family and interpersonal relationships, creativity, environmental sustainability and inquiry learning: "[it is important to] create a world of adventures, building huts and secret places, or simply going for a walk and talking under the shade of eucalypti trees. That is also a part of learning what real life is" (Valsassina, n.d.). In this study, Colégio Valsassina was represented by Bernardo Silva's former teachers and group coordinators during secondary school (8th to 12th grade), Dr Maria da Luz Fernandes (MLF) and Dr José Manuel Marques (JMM).

8.4.2.4. Helena Costa: first coach at SL Benfica

Born in Alhandra (Portugal), in 1978, Helena Margarida dos Santos Costa (HC) currently works as a professional scout for German Bundesliga (top-tier) club Eintracht Frankfurt. HC holds a UEFA Pro license, a bachelor degree in Sport Science (Faculty of Human Kinetics, Lisbon) and a master degree in Performance Analysis in Football. She joined Benfica in 1998, and for 14 years worked with the club's non-competitive football schools and with its competitive teams, coaching players from under-7 to under-17. In 2005/06, HC worked simultaneously as a youth coach at Benfica and first-team manager at Sociedade Recreativa e Desportiva Cheleirense, an adult men's team with which she won the regional league on that season. She then moved to women's football, coaching Sociedade União 1º de Dezembro and Odivelas Futebol Clube, and winning three national leagues (two in the first division and one in the second) and two Portuguese Cups. In 2010, HC left Portugal to become responsible for women's football with the Qatar FA and in 2011/12 moved to Iran to take up a head coach

role with the women's National team. After one season she started working as a scout with Celtic FC (Scotland), and in 2017 joined Eintracht Frankfurt in the same capacity, where she remains today as Head of International Recruitment.

8.4.2.5. João Tralhão: Bernardo's coach at Benfica under-19s

Born in Lisbon, in 1980, João Carlos Valado Tralhão (JT) is a UEFA Pro licensed coach with a Sport Science degree from the Faculty of Human Kinetics – University of Lisbon. After completing his academic studies in 2001, JT did an internship with SL Benfica, working with the club's non-competitive football schools before being hired on a permanent basis. In 2002, he started working with Benfica's under-13s 7 and 11-a-side teams. During the following seasons he became assistant coach of the club's under-16 and under-17s, and in 2005 JT had his first Head Coach role with the under-10s group. He later joined the under-19s staff as assistant coach, a position that he also held during the season 2007/08 with Benfica's first team. Between 2011 and 2018, JT was the Head Coach of Benfica's under-19s, reaching the final of UEFA Youth League twice. He was distinguished by the Portuguese FA as the 'Best Youth Coach' in the country in 2017/18. In 2018/19 JT coached Benfica's under-23 team before moving to French Ligue 1 club AS Monaco in October 2018 as assistant manager, where he stayed until January 2019.

8.4.2.6. Luís Campos: former AS Monaco sporting director

Luís Filipe Hipólito Reis Pedrosa Campos (LC) was born in Esposende (Portugal) in 1964. He holds a UEFA Pro coaching license and a degree in Sport Science from the University of Porto (Portugal). LC started his coaching career as an assistant at UD Leiria (Portugal) in 1990/91, progressing to the Head Coach position the year after. In 1995/96 he managed his local club – Esposende – in the Portuguese third tier, and between 1996 and 2004 worked in the top two leagues, managing clubs like CD Aves, Leça FC, FC Penafiel, SC Beira-Mar, Gil Vicente, Varzim, and Vitória Setúbal. In 2012/13 LC was invited by manager José Mourinho to work as a scout with Real Madrid FC. The season after he joined AS Monaco (France) as advisor to the president Vadim Vasilyev, signing Bernardo Silva for the first team in 2014/15. LC joined Lille in 2017, where he advised club president Gerard Lopez until December 2020.

8.4.3. Procedure

After ethical approval was granted, Bernardo Silva and his family were contacted. He was chosen due to being widely recognised as a highly creative player by myriad stakeholders in football, and had achieved a 'super-elite' status. This made him potentially interesting for a broad audience and particularly for sporting creativity scholars. There was wide information available about him, and BS and his family were willing to participate in the study. As a Portuguese citizen and a football fan and researcher, I had positive feelings about him, albeit not particularly strong, given that I had not followed his career closely, except for his participations with the Portuguese National Team. With regards to ethical considerations, he was deemed eligible because I could not foresee this project causing him or his family any harm. Nonetheless, given his public exposure, it was agreed that Bernardo and his family would be kept informed of the progress of the research process at all stages. They could also review the study before submission to ensure authenticity of the biographical account.

The next step focused on the identification of primary and secondary sources. An initial search for online (news articles, videos, podcasts) publications about the player was conducted, and those documents deemed relevant, i.e. relating to his developmental pathway, were compiled on an electronic database. Subsequently, primary sources were identified based on four criteria that could allow for triangulation (Patton, 2002): a) they had close contact with Bernardo for at least one year and in a relevant institution, i.e. family, club, school; b) they allowed for the investigation of different stages of Bernardo's career, i.e. childhood and early engagement with sport, youth elite level, professional; c) they were willing to participate in the project; d) they were recognised by Bernardo as able to provide authentic accounts of his career.

This process resulted in the identification of five primary sources beyond the player himself: Maria João Mota Veiga (Bernardo's mother, in representation of the family), Maria da Luz Fernandes and José Manuel Marques (Bernardo's former teachers, in representation of one of Bernardo's schools, Colégio Valsassina), Helena Costa (early career coach), João Tralhão (under-19s coach), and Luís Campos (sporting director at Bernardo's first international club, AS Monaco). After sources were identified, they were contacted via e-mail and/or telephone. Following their agreement to participate in the study, unstructured

face-to-face and remote (i.e. Skype) interviews were conducted between April 2019 and May 2020, in settings and dates deemed convenient by the participants. All interviews were conducted in Portuguese and lasted between 25 and 60 minutes. They were audio-recorded and transcribed verbatim, before being translated into English by me, a native Portuguese speaker with 26 years of written and spoken engagement with the English language, inclusively at the university level.

8.4.4. Data collection

8.4.4.1. Secondary sources

An online Boolean search using Google engine was conducted to identify relevant secondary sources (audio, video, written) that could provide further insight on Bernardo Silva's developmental context (e.g. news reports and interviews relative to his sporting, school, and family background. Portuguese and English languages were included and thus the search strategy used the terms "Bernardo+Silva" AND development OR formacao AND futebol OR football OR soccer, returning 6,490,000 entries. Due to the high number of results, and the need to ensure the quality of the information, entries were filtered and had to meet at least one of the following criteria before being included in an electronic database: a) published by an official, certified, news outlet (e.g. registered with regulatory body like IPSO (UK) or ERC (Portugal)); b) involved clear and verifiable participation of Bernardo (e.g. podcast or video interview). Potential issues of authenticity and trustworthiness associated with online research (Hewson & Stuart, 2016) meant that data found relevant for the aim of this study were verified with primary sources during interviews and re-confirmed where needed during the data analysis and write-up stages.

8.4.4.2. Primary sources

Unstructured interviews are particularly useful to gain deep insights into people's lives (Patton, 2002) and allow for participants to elaborate on a given phenomenon (in this case Bernardo's developmental pathway and creative learning). They can provide detailed accounts from an individual perspective without being guided by the researcher's pre-existing hypothesis (Zhang & Wildemuth, 2009). Furthermore, as each interviewee had interacted with Bernardo in different settings and at different points in time, the use of unstructured

interviews (loosely guided by provisional biographical data collected via secondary research) was deemed more appropriate in order to fulfil the aim of the present study.

8.4.5. Data Analysis

An iterative approach, based on abductive reasoning, was adopted in this study. Abduction relates to "the back and forth process of constructing a hypothesis, carrying that hypothesis into the field of investigation, and revising it when or if the hypothesis is negated by new discoveries (Tracy, 2019, pp.27-28). This combination of etic and emic research is compatible with du Plessis' (2017) step-wise approach, which suggests that albeit a formal theoretical lens is usually chosen only at the end of the data collection stage, "in reality theory selection often takes place earlier in the research process and is determined as much by the researcher's familiarity with a specific theorist as it is by the inherent suitability of the theory" (p.225). In that vein, it must be recognised that the adoption of Tanggaard's (2014) situated model of creative learning as a theoretical framework to reflect on Bernardo's creative learning journey may have been influenced not only by my identification with a socio-cultural conceptualisation of creativity but also with the demonstration of the theory's potential to examine creative processes in sport during study 2.

Where possible, data was printed into physical copies (e.g. text documents from news and interviews), before being read and re-read for familiarisation (Braun, Clarke, & Weate, 2016) Coding followed a deductive approach, which meant that upon translation – from Portuguese to English - quotes and episodes generated through the analysis of primary and secondary sources were underlined (see Appendix 7) and associated with one of Tanggaard's (2014) three pillars of creative learning, i.e. immersion in the topic of interest, traditions and in the subject matter; experimentation and inquiry learning, and resistance from the material of interest. Subsequently, codes were organised chronologically as sub-themes under each of Tanggaard's (2014) pillars (treated as overarching themes), to form a cohesive, narrative structure, typical of the study of lives: "how one tells the story of the life directly affects the story's persuasiveness" (Schultz, 2005, p.7).

8.5. Results

8.5.1. Immersion in the topic of interest, traditions and in the subject matter

This pillar encapsulates my findings regarding Bernardo Silva's engagement with the football domain since his childhood up to adulthood, when he became a professional football player. It refers not only to his development as a player but also other activities that allowed him to be more familiar with football's traditions, e.g. watching live matches with relatives at the stadium, taking up the role of 'ball boy'. The section is divided in four sub-themes summarised in table 9.

Table 9: Summary of sub-themes relative to the pillar Immersion in the topic of interest, traditions and in the subject matter

Pillar	Sub-theme
Immersion in the topic of interest, traditions and in the subject matter	Early life: football, a family affair
	The first steps at Benfica's recreational school
	Interacting with role models
	Peers as key for creative learning

8.5.1.1. Early life: football, a family affair

Bernardo's connection with football started very early and the sport had much importance during his early years (see figure 2): "since I recall existing, I always had a ball next to my feet. At school, on the beach, so a great part of my [childhood] memories are related to playing football." (Silva, as cited in Ramires, 2019) Bernardo's mother, MJV, remembers that Bernardo rapidly developed an extraordinary relationship with the football, displaying unusual motor skill for his age: something that was confirmed by one of his first coaches, Helena Costa:

> "When Bernardo was 3, he would be playing at the beach in Sesimbra and men would stop just to watch him. They would ask me: 'have you realised that you have a very talented son?'. And I would say yes, I have." (MJV)
>
> "I look at Bernardo today and Bernardo has exactly the same things that he had at the time [aged 7], the way he ran, the way he dribbled, Bernardo had such a great intelligence. (…) He was always super creative, hardly lost the ball, everything you see today, the movements he does, really, (…) much of it already existed back then." (HC)

Bernardo’s passion for football was largely motivated by his family’s interest in the sport. He used to play for hours with his sister Maria (four years older) at their maternal grandparents’ backyard in Sesimbra (Record, 2018), a municipality of the Setúbal district in Portugal. His mother and maternal grandfather were keen Sporting CP fans who usually attended matches at José de Alvalade stadium. In addition, his father was a talented football player (who never played professionally) and just like Bernardo, supported Sporting CP’s rival SL Benfica. Bernardo credits his family, and especially his mother, with fostering his passion for the game and for providing him opportunities to develop his skills:

Figure 2: Bernardo Silva at his grandparents' home aged 4 wearing SL Benfica's official kit

> “I have always loved to play football. My parents understood that, and on my 7th birthday, one of my gifts from my grandfather and my mum, who are Sporting CP supporters, was to register me in SL Benfica’s football schools. That’s where it all started.” (Silva as cited in Ramires, 2019)
>
> “I am a liberal mother and always allowed my kids to do some mistakes. And I would let Bernardo play football inside the house. (…) At a certain point the ball was like an extra limb in Bernardo’s body, because I always

let him play with the ball. The ball became another foot, another hand" (MJV).

8.5.1.2. The first steps at Benfica's recreational school

Bernardo's first contact with organised football took place at the age of 7 in SL Benfica's football school, a participation-oriented setup of the Lisbon-based club, open to any child who could afford a monthly membership fee. Bernardo had requested that his parents allow him to join the school one year earlier, but they deemed it too soon. In 2001, the maternal grandfather finally registered Bernardo in Benfica's school as a birthday gift. Sessions took place twice a week, and each year the coaches would make a selection of the school's best players in each age group, who were then invited to join Benfica's competitive youth teams. Bernardo's early abilities did not go unnoticed to coordinator António Fonte-Santa and coaches Miguel Soares and Helena Costa:

> "I had two weekends to do that selection. And I remember perfectly having my final list ready, with just one session to go. I was talking with António Fonte-Santa and almost at the end I start seeing Bernardo, and I only tell him: 'Fonte-Santa, what is this?!!'. And obviously Bernardo was selected, and since then he was with me [for more than a year] until joining the competition teams earlier than usual. Because he had such a great talent and ability, we ended up realising that he was at a competitive level that was not useful to him." (HC)

After being selected as one of the best within his age group, Bernardo received personalised attention from the coaching staff, who tried to continuously create challenging tasks and constraints that could help the young talented player fulfilling his potential:

> "A 1v1 situation was too easy for Bernardo, so we would create 2v5 or 2v6 games. The team of 6 would have multiple goals where they could score, Bernardo and his colleague only one. (…) And we would also stimulate the others through our feedback, so that they wouldn't allow Bernardo and the other player to win. So, that competitive spirit, it also fed the sacrifice spirit of the two [attackers]. We always tried to create this degree of difficulty, so that things were not easy, otherwise training would have no effect at all [even though] with Bernardo it was not really needed. He is one of those

[players] who gets really upset when he loses, he doesn't want to talk." (HC)

Despite his high competitiveness, Bernardo was described by Helena Costa as having a very calm, friendly character. He was extremely focused while competing but often daydreaming when not. Furthermore, Bernardo was punctual, responsible, and behaved like a normal child, even during matches:

"I remember a day we spent in Setúbal, playing endless matches with on-the-fly substitutions. And I took Bernardo off so that one of his team-mates could play. When I look behind, Bernardo was doing little piles of sand on a nearby pitch, instead of sitting on the bench. So, they were still kids." (HC)

While playing with the football school, Bernardo also had the opportunity to travel around Portugal (including a trip to Azores) and to visit Luxembourg. He was always accompanied by his mother who, together with Bernardo's maternal grandfather, followed his career very closely and provided him with constant logistical support. MJV regularly did 50km round-trips to Seixal (where Benfica opened its brand-new academy in 2006) to pick up Bernardo from training and watch his matches.

8.5.1.3. The academy years: the pleasure of practice

Bernardo's obsession with football was also noticed by his teachers at Colégio Valsassina, a private institution in Lisbon which Bernardo attended from the 5th to the 11th grade (10 to 17 years), after attending kindergarten and primary school at an English-speaking institution in the Portuguese capital, Denise Lester Foundation/Queen Elizabeth School. Teachers at Colégio Valsassina commented that despite sharing his passion for football, Bernardo's parents were instrumental in ensuring he did not overlook his academic path:

"[Bernardo] was absolutely obsessed with his training; everything else was secondary in relation to sport. And there the role of the family was extremely important, because his parents were always very balanced people, both his dad and mum. Although they recognised his talent, his ability, his commitment his willingness, the pleasure that it [football] gave him, which was hard to explain or describe, the feelings he had in relation to football...his parents always made sure Bernardo completed his academic

path with quality, regularity, achieving exactly what was expected from a kid with his [intellectual] abilities." (MLF)

Bernardo himself recalls how his parents respected his love for football and his ambition to become a full-time professional, while simultaneously emphasising the importance of education:

"[My parents] always allowed me to follow my dream, which was to play for Benfica and practice every week. But I can perfectly remember my parents obviously telling me 'we allow you to do this, you can play football which is what you like to do, but you must always continue studying." (BS)

From 12 to 17 years, Bernardo did not have many opportunities to play competitive matches for Benfica, mostly due to his small body frame, but continued to progress across age groups. He always felt comfortable at the club, and maintained a love for practice:

"Normally players don't like to practice, they like the matches. And Bernardo loves practising. (…) [So] he was always very happy there [at Benfica]. If I thought my son was unhappy there...There was a time when he was a bit sad because he was often left out [of matches]. Because there were other players who were double his size, proper men, and Bernardo was tiny. And it was unavoidable that he would be left out. But we [parents] never interfered, because that gave him pleasure and above all he had to feel pleasure. (…) We asked him directly – 'do you like it?' and he replied 'no, no, I still like it, I just wanted to play more often, that's all'." (MJV)

8.5.1.4. Interacting with role models

Although at times disappointed due to a lack of regular competitive opportunities during part of his youth, Bernardo could always count on the support of his family, and also of former Portuguese international and one of Benfica's legends, Fernando Chalana, who was assistant coach in the academy. Indeed, Bernardo claimed that Chalana was instrumental for him to have patience, develop self-belief and maintain his ambition of becoming a first-team player:

"When you are not an option for the coach during your youth development it is complicated. (…) Fernando Chalana was the person who helped me the most. When I was 16, he gave me the confidence to keep going. I wanted to leave Benfica, I wanted to play more often, But he came to see me and told

me: ‘this coach knows nothing about football, you are the best player here, and one day you will be very important, you will see that you will make it’. His words gave me much confidence because he was a great player in his time, a reference for Benfica and for the National team. He is someone very special to me (…) He used to call me ‘little Messi’.” (Silva, as cited in Record, 2018)

Figure 3: Bernardo as a ball-boy (sitting) at Estádio da Luz (Portugal) during Rui Costa’s farewell match in 2008

Simultaneously, Bernardo had the chance to experience a top level environment from very close, feeling the ambience of big matches. Not only did he practice in the same facilities as Benfica’s first team, but he also had the opportunity to watch his idol Rui Costa in action from a privileged position, when acting as a ball-boy at Estádio da Luz during first-team matches (see figure 3).

8.5.1.5. Peers as key for creative learning

After spending 12 years with Benfica, Bernardo was transferred to AS Monaco in 2016, and went from playing in the Portuguese 2nd division to French Ligue 1, considered one of the top-5 leagues in the World. In order to fully express the creative potential that led sporting director Luís Campos to pay more than €15M for his transfer, Bernardo had to adapt to a new, more demanding environment. In that vein, Campos explains that much of Bernardo's success and fulfilment of creative potential at the top level is due to the support he received from his team-mates and in particular from his compatriot and AS Monaco team-mate João Moutinho:

> "The person who made Bernardo grow the most was not a coach. It was a colleague called João Moutinho, (…) [who] awakened his creativity. João stimulated him. For example, Bernardo responds differently to some stimuli and during training he could be daydreaming. Dazzled with the view from La Turbie [AS Monaco's training centre] over Monaco, over the sea, admiring what others don't value. And João would put him back in the game, telling him: 'look, you've got to sort this out because we're not managing to'." (LC)

> "João Moutinho and his wife Ana have been a great source of support for my son, helping with his adaptation and nowadays still providing him with encouragement and advice. Almost like second parents despite the age difference between them not being so significant." (MJV)

In resume, Bernardo engaged with football since very early, displaying an unusual level of skill for his age. He developed it through many hours of informal practice by himself and with his older sister Maria before joining a structured training environment at the age of 7. There, he benefited from personalised support, with coaches adapting training drills to fit his abilities. Family support was constant, both emotionally and logistically, but Bernardo's parents also emphasised school performance as a non-negotiable priority. Despite having limited opportunities to play official matches between the age of 12 to 17, due to his late physical maturation, Bernardo maintained a love for practice, and remained confident in his potential. Once again, family support was instrumental, as were the words from one of Benfica's legends – Chalana – who was part of the club's staff. Additionally, Bernardo's role as a ball-boy allowed him to experience

the ambience of top level matches. When he transitioned into the high level, adult game at Monaco, he continued to develop with the assistance of more experienced peers, who allowed him to take risks and express his creative potential.

8.5.2. Experimentation and inquiry learning

This second pillar describes Bernardo's involvement with multiple activities beyond the 'academy bubble' throughout his childhood and teenage years, as well as his passion for other sports. Moreover, it explains how Bernardo's family always stimulated his curiosity and provided him with many opportunities for experimentation and personal development based on his preferences and dispositions. The section is divided into four sub-themes, summarised in table 10.

Table 10: Summary of sub-themes relative to the pillar Experimentation and inquiry learning

Pillar	Sub-themes
Experimentation and inquiry learning	Life is more than football: culture and curiosity School as a source of experimentation A generalised love for sport Less pressure, more opportunities for experimentation

8.5.2.1. Life is more than football: culture and curiosity

Despite his intense passion for football, Bernardo's childhood and adolescence were filled with a myriad of different experiences and environments, very much influenced by his parents. Bernardo's mother emphasised the importance of stimulating curiosity and intellectual development in diverse areas, beyond the football pitch:

> "Bernardo was always very stimulated, very much incentivised to be curious. If [children] do not have a minimum of curiosity to know something else, they will be in trouble. They won't be able to create anything. (…) Maybe today what is missing in [football] academies is the intellectual stimulus, intellectual gymnastics, which many times is not available. Muscular exercise is not enough. What about the rest? (…) Bernardo is not only a football player and I think that makes his life easier on the pitch as well. (…) This mental stimulation must be trained since

childhood, I really believe in that. (…) The other day [Benjamin] Mendy described my son as 'the Picasso of football' and I found it funny [because] Picasso already painted by the age of 5. But why did he paint? Because his parents gave him the materials (…) The surrounding environment conditions a lot." (MJV)

In a similar vein, Luís Campos contends that Bernardo does not fit stereotypes associated with football players, and stresses the importance of stimuli for creative expression:

"Bernardo is no ordinary football player. He is not the normal kid. (…) 90% [of players] have a profile and he has a profile completely out of the ordinary. I think Bernardo needs to be stimulated so that we can take all the creativity he has inside of him. For him to 'explode', he needs to be stimulated. (…) He is smart and he is so creative, he can appreciate things. He's not a normal footballer." (LC)

Despite being an avid reader herself, Bernardo's mother explained that as a child and teenager Bernardo was not particularly enthusiastic about books. She did not try to force him to read beyond the mandatory texts at school. Instead, she focused on stimulating the discovery of other cultural areas that appeared to capture his interest:

"I always told him – 'Bernardo, don't stop, keep going, be curious. You don't like reading? (…) Watch series, films, listen to music' (…) He prefers jazz and opera to video games. Nowadays, approaching the age of 26 he suddenly became interested in learning to play the piano and reading poetry. He needs these stimuli." (MJV)

8.5.2.2. School as a source of experimentation

Bernardo's parents' decision to register him at Colégio Valsassina at the age of 10 was aligned with their belief on the potential benefits of inquiry learning and a broad, holistic education for the development of multiple identities:

"We put him in Colégio Valsassina because we believed (…) that the college would focus a lot on teaching values and principles, and that is very important (…). And he may not like reading, but he learned how to read well, he learned economics. The foundations are there. Then it's only about awakening them if needed." (MJV)

> “I dare to say that the college gave him some support to make him believe that he is not just a football player. He is also a person, (…) and an individual who has intellectual abilities, who can perfectly have a career as a manager, engineer, teacher, or anything else if he commits to it. (…) Unfortunately others did not have this level of support, which is fundamentally influenced by the family.” (JMM)

At Colégio Valsassina, Bernardo benefited from a style of education that placed equal importance on cognitive, motor, interpersonal, and cultural development, fostering critical and creative thinking instead of mere fact memorisation:

> “Kids may not have exceptional results but there is noticeable creativity. For example on how they write an essay in History. A few days ago I was reading letters that the kids wrote as if they were soldiers in World War I writing to their families. (…) We promote creativity in the most diverse areas, arts, literature, languages, science, and maths. Obviously it’s not creativity for the sake of creativity. It’s creativity framed in a learning process, as a process that leads to growth, to an increase in knowledge, skills, competencies.” (JMM)

> “We value a lot and try to stimulate what is called ‘thinking outside the box’. But to do that you must have a foundation, a solid departure point. I can only subvert the rule if I know the rule very well. So I would say that creativity will be better stimulated if the learning of the rule, the internalisation of the rule, is good as well no matter the area: volunteering, academic, sporting…” (MLF)

Nowadays, Bernardo’s close-knit friend group is still mostly composed by friends from kindergarten and school, who visit him often in Manchester and with whom he embarks on longer holiday trips. Bernardo recognises the importance of experiences beyond the pitch, considering they are instrumental in enabling his creativity:

> “I believe that interacting with different environments on a daily basis, dealing with different things, is something helpful for everyone. Not only in terms of football, but for everything in life. For people to develop and get to know different things.” (BS)

8.5.2.3. A generalised love for sport

While immersed in the football world since very early and investing most of his time and energy in it, Bernardo enjoyed other sporting activities: skimming (a sport that involves riding a board on wet sand or shallow water) during holidays by the sea in Sesimbra; tennis and padel (a racquet sport typically played in doubles on an enclosed court approximately 25% smaller than the size of a tennis court) with his father during weekends:

> "My parents always stimulated me to do different things. Skimming more from my mother's side when I was in Sesimbra. With my dad I would play more tennis. Then when I became older I also played a lot of padel with my dad. And obviously having those stimuli is something very helpful too." (BS)

> "Bernardo entered some skimming championships and he always got the first place, he was so small. Then when football became more serious, he had to drop it. (…) But he always played other sports." (MJV)

8.5.2.4. Less pressure, more opportunities for experimentation

Bernardo believes that creative learning does not depend exclusively on extra-sporting activities. He contends that other than parents, academies can also play a crucial role in fostering creative development in different ways. In his case, he credits Benfica's academy with providing him a good opportunity to interact with young players from multiple cultures and beliefs since a young age:

> "In the academy we meet people from very different backgrounds, from very different countries since very early, and we learn a lot. And I think that also influences a person's creativity. I remember since I was 7 interacting with people from Brazil, Africa, Portugal, the centre of Lisbon, the suburbs, the North of the country, the South, and to socialise with all these differences helps a lot [to enhance creativity]." (BS)

Simultaneously, Bernardo argues that academies can promote creativity if they manage correctly the level of pressure imposed on young players, and combine structured training with flexibility for experimentation throughout the developmental path, e.g. allowing players to try different positions on the pitch, instead of focusing too much on early positional specialisation:

> "[Excessive] pressure always takes a bit of your freedom and creativity away. Because a 7 year-old, a 10 year-old, a 15 year-old, they are not ready to deal with these kinds of pressure right? And that high pressure can come from parents, from the club, from many places (…). I think players should be educated to respect the rules but especially when kids have 12, 14, 15 years, they should be given freedom to enjoy themselves on the pitch and find solutions, because it's in those occasions that often you discover new things. For example, a player who thinks he is a centre-midfielder, one day experiments playing in defense and finds he is much better as a defender. (…) In those ages, players should have more freedom to explore themselves a bit more and to learn what they are good at, what they are not so good at, and what they have to improve. It's a matter of balance." (BS)

In summary, although football had a central role in Bernardo's life since very early, his parents tried as much as possible to spark his curiosity by allowing him to experience other activities and environments. They did so departing from Bernardo's dispositions, i.e. probing him to explore areas that he showed interest in, like cinema, instead of others that he clearly disliked, e.g. literature. Moreover, Bernardo benefited from attending a school that had a pedagogical project based on inquiry learning and holistic education. At Benfica's academy he interacted with teenagers from multiple nationalities, beliefs and socio-economic backgrounds, which in Bernardo's perspective contributed to further his creative development.

8.5.3. Resistance from the material of interest

The last pillar describes how Bernardo's small body frame simultaneously limited and enhanced his process of creative development. He reveals how experiencing different types of leadership and adapting his mind-set were instrumental for him to reach the professional game. The section is composed by two sub-themes summarised in table 11.

Table 11: Summary of sub-themes relative to the pillar Resistance from the material of interest

Pillar	Sub-themes
Resistance from the material of interest	Size matters? Developing through and from resistance

8.5.3.1. Size matters? Developing through and from resistance

At Benfica's academy the developmental philosophy focused on providing young players with diversified styles of leadership, and various experiences and challenges across age groups in order to better prepare the future professionals for the demands of the contemporary game:

> "It was important, during their [the players'] development to experience certain types of leadership, certain types of competition, and certain types of difficulty so that the end product could be a player that is prepared for professional football. And we know well that nowadays the coach uses a system one day, tomorrow another, today you are on the starting XI, tomorrow you are out of the team sheet. (…) We wanted players to be complete in different dimensions. And for that to happen they have to go through different scenarios, of great difficulty, of great success. Various competitions where they are at their limit, others in which they are perhaps in a different record. That is the difference that Seixal's academy has in comparison to others". (JT)

However, during most of his teenage years at Benfica, BS often felt frustrated due to a lack of playing opportunities, which the now 5'8'' (173cm) player attributes to his height and size:

> "Between 12 and 17 I had a tough time, essentially because at the time people who oversaw Benfica's youth teams looked more to the results and to the physical side of players rather than investing on potential, on those players who they thought could one day play for the club's first team. But those were the club's choices, which I always respected." (BS)

However, Bernardo and his former coach Helena Costa concur in suggesting that an important reason for the current Manchester City player's success was his ability to think creatively and use his personal constraints in his favour:

> "I was really much smaller in comparison to others, skinnier, shorter. So I had to find other things that balance it out a bit. Because physically I was so much below the others, I had to be much better in other things to be levelled with them. And so the thing of trying to think faster, trying to decide better,

> trying to find other solutions on the pitch and position myself better. I had to develop that so that I could play at the same level of my teammates." (BS)
>
> "Bernardo had such a great intelligence, he was always small, just like today, and I think that brought him other needs and allowed him to develop other characteristics that today are more visible but that already existed back then. Like the ability to anticipate, to avoid contact, he read the games much faster than his colleagues." (HC)

Curiously, Luís Campos admitted that Bernardo's size difference in comparison to other players was in fact what initially placed the youngster under his radar:

> "I noticed him because he was much smaller than the others and extremely energetic and dynamic in the search for solutions. (…) I noticed that there was a little kid there, smaller than the others, but he was getting the game moving. (…) Bernardo is creative because he is a young man who, when faced with a problem, tries to find solutions." (LC)

8.5.3.2. The turning point: a matter of mindset

After five years of limited opportunities to play in Benfica's academy, Bernardo moved to the under-18s, where he started a two-year working relationship with coach João Tralhão. Albeit maintaining his passion for training and for the club (which resulted as well in his only tattoo, with Benfica's motto '*E pluribus unum*', i.e. 'out of many, one'), Bernardo wanted more opportunities to compete. In turn, João Tralhão explained some of Bernardo's difficulties not only with his size, but also with his mind-set at a stage of further specialisation more aligned with deliberate practice rather than deliberate play:

> "Bernardo took the game a bit as a hobby, and rightly so. It's not that he took it as a joke, because he always wanted to become professional. But he associated the game with something playful. And for me that's one of the secrets of his success. Until a certain moment Bernardo went through a phase of total success, he was the best player. And when he gets to a level where performance becomes more important, things change, right? And that adaptation is sometimes the most difficult (…) The decisive intervention that I had with Bernardo was to show him the difference between a more recreational game that made sense until under-17s and what would be the reality of professional football. It was perhaps no longer the football in

> which he could play around during training, where he could go to training and have fun with the teammates, and with the ball. It was a different environment. And that's where I tried to influence him." (JT)

Nonetheless, Bernardo contends that striking a good balanced between his role as a professional footballer and his personal life is a priority for him. Indeed, BS believes that is one of the main reasons of his sustained sporting success at the highest level:

> "I have always been someone who tried to live a life beyond football and I don't give up on that. I never did and I will not do so, independently of play with Manchester City at the age of 25 or 26 or playing with Benfica's under-17s." (BS)

At the age of 17, and after another season of intermittent appearances with the under-18s, Bernardo became convinced he would have to leave Benfica to play more regularly. However, his coach did not agree and challenged Bernardo to rethink his approach:

> "Bernardo came to see me with 5 or 6 weeks left until the end of the season, saying that leaving would be the best for him (...). And I told him: 'leave? Are you crazy? I spent the whole season here shaping you, helping you, and now you are going to quit? No way, you will work even harder. For the next 6 weeks you will give it all during training and then we have an important tournament in Germany. You will show yourself, not to me, not to me, but to yourself, that next season you will be the headline of this team.' (…) And he did all that. We got to the tournament in Germany and it was incredible!" (JT)

Bernardo corroborated his former coach's account and explains why Tralhão's words were so important for him to gain confidence and finally express his full potential:

> "I had these negative thoughts that I would never play for Benfica, nor get the opportunities. I thought they would never invest in me. And when I realised that it could change, I think I had a 'click' and took a giant leap so that things would go well in my career. (…) At the time, João [Tralhão] gave me the necessary confidence for me to do well during the next season, when we became under-19s Portuguese champions and I was called to the

National team. I think that was somehow the beginning of everything, yes." (BS)

In resume, Bernardo appears to have benefited from the developmental philosophy of Benfica's academy, which establishes varying levels of challenge and multiple experiences throughout the player pathway. Furthermore, although Bernardo's small size may have limited his competitive opportunities during adolescence, his coaches credit an important part of his success to his adaptability, i.e. how he managed to transform a perceived limitation into an opportunity to enhance his creativity. An interesting point of debate was the influence of Bernardo's mindset on his transition to the adult game. On the one hand, João Tralhão believed Bernardo was not focused enough and that endangered his transition to the professional level. On the other, the player suggested that having diversified interests were key to his success in football and allow him to stay engaged with the sport nowadays. Notwithstanding, Bernardo also admitted that his coach's support and advice were essential for him during times of doubt and difficulty, and gave him the self-confidence and motivation to move beyond his perceived limits and express his full creative potential.

8.6. Discussion

The present study aimed to examine the developmental path of eminent football player Bernardo Silva based on a socio-cultural conceptualisation of creativity as a multi-dimensional, complex, situated, distributed, and relational phenomenon. To date, conceptualisations of genius and eminence have been mostly associated with divine inspiration (Montuori & Purser, 1999) or intra-individual characteristics (Becker, 2014). However, in line with Martin and Cox's (2016) findings regarding Steve Nash, results of this study clearly showed the complex and relational nature of creativity in the developmental pathway of Bernardo Silva. Interactions with significant others – e.g. family, teachers, coaches – across formal – e.g. school, academy - and non-formal environments – e.g. beach, home - generated affordances for Bernardo Silva to fully express his creative potential.

Accounts from family, coaches and a former sporting director reinforce the pertinence of Gagné's (2013, p.5) proposal that although "untrained and spontaneously expressed outstanding natural abilities" may exist, they require

appropriate stimulation in order to be expressed. That is, as Aggerholm (2015) suggests, the difference between 'having a talent' and 'being a talent'. Moreover, as with study 2 (see chapter 7), the adoption of Tanggaard's (2014) situated model of creative learning proved a useful lens to investigate sporting creativity, this time with regards to an individual player, retrospective and longitudinally. Bernardo's developmental path was characterised by a deep immersion in football and in its traditions, numerous opportunities for experimentation and inquiry learning in both sporting and non-sporting domains, and episodes of resistance and frustration that ended up becoming instrumental for his differentiation from others and subsequent affirmation at the top level.

Born in a family that was passionate about football, Bernardo started acquiring knowledge and expertise in the domain (Tanggaard, 2014) since very early. This is in line with studies that emphasise the importance of accumulating hours of formal and informal practice for creative development in sport (e.g. Memmert et al., 2010; Martin & Cox, 2016; Hendry et al., 2018). Notwithstanding, it is important to note that although the family connection to football may have initially triggered Bernardo's initial interest in the sport, it was the player's intrinsic motivation which led him to establish a deeper relationship with the game and its traditions, e.g. his permanent desire to have a football at his feet and his frequent requests to join Benfica's football school, which his relatives only accepted the age of 7.

Intrinsic motivation has often been associated with creativity. Sstudies showed that "when individuals approach new concepts with high levels of curiosity and interest, information is better learned and remembered" (Hennessey, 2019, p.376). Upon joining the football school, Bernardo benefited from an environment where there was a combination of structure and inquiry learning. Recent studies in education (Vansteenkiste et al., 2020) and sport (Cooper & Allen, 2020) have shown that a combination of autonomy and competence support may contribute to an empowering motivational climate. (see chapter 6 for further discussion). Considering the positive effect of such approach in Bernardo Silva's developmental journey described in this study, it can be speculated that this combination may also enable creative development.

Moreover, Benfica's coaches prioritised the design of training tasks based on a constraints led-approach (Renshaw, Davids, Newcombe, & Roberts, 2019) –

i.e. with high representativeness and adjusted to players' individual characteristics and stage of development, - which have been deemed particularly appropriate for fostering sporting creativity (Santos et al., 2016; Vaughan et al., 2019). Furthermore, the emphasis placed by coaches on healthy competition appeared to have a strong impact on Bernardo with regards to his mood, even if at times negatively, i.e. when feeling upset after a defeat. Baas (2019) explains that activation, i.e. "increased engagement of basic motivational systems to mobilize energy to sustain attention and effort toward goal-related activities" (p.258), is a key aspect for promoting creativity. Therefore, while mood states like happiness and anger may contribute to the promotion of creativity, relaxed, sad, or calm mood states may have no effect on it, or even result in its decline (DeDreu et al., 2008).

Another important element in Bernardo's creative learning journey refers to the interaction with and support received from role models across his career, i.e. idols and peers. Tanggaard (2014) stresses that having close contact with role models is "even more influential than the other things to be learned: the subject matter, skills, and methods" (p.113). In Bernardo's case, contact with role models occurred at three different levels. Firstly, when working as a ball-boy during Benfica's first team home matches at Estádio da Luz, where he could closely observe his idol Rui Costa in action, who inspired him to keep investing in himself, trying continuously to get better. Secondly, when at the under-17 level he received words of encouragement from Fernando Chalana, a former legend of the club that was crucial in preventing Bernardo from leaving Benfica and potentially dis-investing in his football career. Thirdly, when reaching top level with AS Monaco, BS was supported by team-mate João Moutinho on and off the field of play. Their close relationship still persists nowadays despite both players representing different clubs within the English Premier League – Manchester City and Wolverhampton. Thus, in line with Tanggaard's (2014) principle of immersion, it is clear that Bernardo's developmental journey was a challenging one, yet "grounded in countless hours of practice as well as good help and feedback from instructors, advisors, and mentors" (2014, p. 110). Thus, it can be posited that eminent sporting creativity is also distributed.

With regards to experimentation and inquiry learning, the second pillar of Tanggaard's (2014) situated model, Bernardo was involved in several activities

during childhood and adolescence. He played multiple sports in parallel – e.g. skimming, tennis, padel – at a recreational level. This provides further support to claims that deliberate play and diversification (Côté et al., 2009), in combination with other strategies like deliberate practice, may be positive for creative development in sport (Bowers et al., 2014; Martin & Cox, 2016; Memmert, 2006; 2015; Santos et al., 2016). One of the reasons for fostering diversification is that "specialized over-training can lead individuals to rely on established knowledge, which can prevent them from discovering new ideas" (Richard et al., 2017, pp.66-67). Bernardo avoided over-training and excessive specialisation through his involvement with skimming and tennis during holidays and weekends, and by playing football in informal, unstructured settings during pickup games with his sister on the grandparents' backyard. This approach was not only important to enhance Bernardo's motor development and acquisition of expertise (Ericsson et al., 1993), but also allowed him to maintain psychological well-being and his love for sport – and particularly football. Even when he struggled for playing time at Benfica's academy during adolescence. Bernardo's case highlights, once again, the importance of breaks and informal spaces for creative development (Tanggaard, 2014).

Tanggaard (2014) stated that "creativity consists of relating curiously to situations that demand we respond in new ways" (p.111). In Bernardo's case, he responded creatively to the potential limitations associated his small body frame, developing speed, anticipation skills and a fantastic relationship with the ball. Furthermore, his appetite for curiosity was fostered since very early by his parents, who made conscious, deliberate efforts to provide him with diversified experiences and opportunities beyond the 'academy bubble'. They promoted interactions with a diversity of cultural artifacts – e.g. books, music records, series, films -, and allowed Bernardo to integrate a school whose educational projects were holistic in nature, influenced by the institution's philosophy that emphasised creativity. Thus, it appears that across Bernardo's life creativity was a common theme across multiple environments, not only an end but especially a means - a 'developmental resource' (Rasmussen et al., 2017).

The relational, interdependent nature of different environments – sporting and non-sporting – and levels – individual, team, club, country, etc. - has been highlighted by recent holistic ecological models of talent development (Henriksen

et al., 2010) and sporting creativity (Vaughan et al., 2019). The life history of Bernardo Silva makes it clear how on the one hand, experimentation in different areas, or the 'cross-fertilizing of thinking' (Sternberg & Williams, 2001) may have some transferability to creative performance on the field of play (Harrison, 2016). On the other hand, constructive alignment, together with valuing inquiry learning and the adoption of creativity as a core life value across important milieu – e.g. home, school, football academy – and between significant actors – e.g. parents, coaches, teachers - appear essential for creative potential to become fully and continuously expressed in an individual's life. Future studies of eminence and genius in sporting creativity should therefore consider such distributed nature. As Jensen and Clementsen (2020, p.156) argue, "everyone in the child's environment influences it and is important to its upbringing".

The present study offered further corroboration to earlier studies that emphasised the importance of parents for children's socialisation (Harwood et al., 2010). Indeed, parental beliefs, goals, attitudes, and feedback have been shown to impact children's developmental paths in sport (Knight et al., 2016), not only during earlier stages of involvement but also through the rest of their lifespan (Knight & Newport, 2020). In that vein, Bernardo may have benefited from the support and availability of highly educated parents, with available time and resources to draw and operationalise a conscious, sustained strategy for his rearing, very much based on a combination of competence and autonomy support (Vansteenkiste et al., 2020; Cooper & Allen, 2020;) adapted to their child's personal constraints (Renshaw, Davids, & Savelsbergh, 2010). This was also evident in the high level of emotional intelligence (Mayer & Salovey, 1997) parents displayed throughout Bernardo's involvement with football. They managed carefully the beginning of his relationship with the sport, and provided him with unconditional support through both successful and difficult times, e.g. when he was frustrated for not playing regularly.

While such consistent, purposeful, and tailored support from families may not always be available to young players whose parents have, for example, difficult economic situations and heavy work schedules, its importance in terms of the overall, and specific sporting development of the child appears crucial. Professional clubs may benefit from creating a parent-positive culture that does not promote the avoidance or secondarisation of parents, but instead recognises

their primary role in healthy youth development (Knight & Newport, 2020). Research on talent development in multiple areas, including sport (e.g. Bloom, 1985) has highlighted the importance of parents' role for future eminence. With regards to sporting creativity, this study is one of the only two investigations to date – together with Martin and Cox's (2016) LPA of Steve Nash– to extend our understanding of parental influence, which was also referred in chapters 6 and 7. Furthermore, this biographical case-study provides original insights into some of the ways in which the actions, attitudes and emotions of parents can facilitate creative development and expression.

The adoption of Tanggaard's (2014) situated model to investigate Bernardo Silva's developmental path contributed to a better understanding of the importance of resistance for the player's creative development. Tanggaard suggests that "the experience of being lost, of being disoriented, of being held back, or simply being frustrated can prompt a creative opportunity to arise" (2014, p.111). In Bernardo's case, his height represented not only a barrier that during a lengthy period prevented him from performing regularly in competitive matches, but also became an incentive for creative exploration. Bernardo was well aware that it would be difficult for him to succeed in football by attempting to interact with his team-mates and opponents making use of physical attributes like strength or speed. Thus, he invested in potentiating his personal constraints (Renshaw et al., 2010) and transforming them into differentiating factors that could allow him to be competitive and add value to the game. His passion for football and persistent exploratory behaviour allowed him to identify affordances often unnoticed by his peers, which warrants reflection at varied levels: firstly, it highlights the importance of creative self-beliefs - e.g. confidence (belief in one's ability to think and act creatively) and self-awareness (belief about one's creative strengths and limitations) – for exploratory behaviour and creative expression (Karwowski et al., 2019). Secondly, it makes evident, once again, the distributed nature of genius. On the one hand, while Benfica's academy may have followed a result-orientation that prevented Bernardo from competing regularly between 12 and 17, the club maintained belief in the player's potential, otherwise his progress across all age groups would have been unlikely, and he would have been released. On the other, he benefited across the whole developmental pathway, from training activities aligned with a constraints-led approach (Renshaw et al., 2019), e.g.

when he showed an unusual level of skill at Benfica's football school, his coaches adapted training drills to fit his personal constraints by making him play in numerical inferiority and having less goals/targets to score than his less-skilled opponents. Furthermore, Bernardo admitted that the advice from role models – especially Fernando Chalana – added to his determination to overcome difficult times and fostered his determination to pursue creative affordances.

The constraints-led approach does not promote idealised techniques or physical profiles, but instead considers talent as an emergence from the interaction between performer, task, and environmental constraints (Hristovski et al., 2012; Renshaw et al., 2019). It highlights the importance of respecting – and celebrating - individual differences. As Renshaw and colleagues (2019) explain: "the challenge for coaches is to understand where on the practice landscape continuum each learner needs to be, when he or she needs to be there, why he or she is best placed at that location on the continuum, and what practice activities need to be designed for an individual learner at that point of the landscape" (2019, p.61). Furthermore, the interventions of parents and role models in providing emotional and pastoral support to Bernardo were crucial to maintaining, and boosting his self-confidence and resilience, when at different points he felt frustrated and wanted to leave the academy. Without such a strong network, Bernardo may have not learned from and with resistance, and become disengaged with football, missing the opportunity to fulfil his creative potential at the highest level.

Similarly to study 2, Tanggaard's (2014) situated model has provided a useful lens through which to consider Bernardo's creative learning journey. My findings offer further support for the model and its usefulness for research on creative development. However, it is important to note the interdependence and inseparability of the model's pillars: "when all three principles work together, the chances that [athletes] (…) develop their own creativity through learning are high" (p.112). Therefore, while academy systems have tended to focus on the development of sport-specific expertise (EPPP, 2011), there appears to be potential in more ecological, holistic approaches that "do not treat creative training as an appendix or an isolated section of a session" (Fardilha & Allen, 2019, p.18), but value creativity on a broader scale, as a 'developmental resource' (Rasmussen et al., 2017) or a 'way of living' (Tanggaard, 2014), shared across the whole academy structure and aligned with relevant social agents in children's

lives, e.g. parents, teachers. At a time when algorithms, Big Data, and performance analysis are gaining increasing influence in the sporting domain (Memmert & Raabe, 2018), and academy environments appear to be contributing to player homogenisation on a grand scale (see studies 1 and 2), creativity has never been so necessary. Its adoption as a core value, used to guide decision-making within sporting structures and as a compass to orient the broad education of children and young players, may prove essential for the future of the Game. And for eminent players like Bernardo Silva to continue emerging in the football scene to the delight of a myriad stakeholders like fans, coaches, journalists and even those financially invested in the industry.

8.7. Conclusion

The present study was only the second to investigate the developmental journey of a highly creative 'super-elite' (Rees et al., 2016) player – following Martin and Cox's (2016) LPA of NBA legend Steve Nash – and the first ever in association football. Through the application of Tanggaard's (2014) situated model of creative learning – which once again proved to be a useful framework to examine sporting creativity -, it became clear that even football 'genius' is distributed. Indeed, while it should be admitted that Bernardo Silva could have some kind of innate predisposition for playing football, he also benefited from a wide network of support and adequate environments that allowed him to develop curiosity and express his full potential. Firstly, his family – and especially his mother – provided him with several opportunities to engage in immersion and experimentation in football, while simultaneously ensuring that he could explore other activities and interests, thus avoiding to get 'trapped in the academy bubble'. Secondly, he attended educational institutions that were strongly oriented towards the promotion of inquiry learning and creative behaviour. Thirdly, at least during the earlier stages of his formal involvement with football, Bernardo Silva received coaching that was adapted to his stage of development and personal constraints, thus benefiting from optimal levels of challenge and frequent opportunities for exploratory behaviour, which as discussed in studies 1 (see chapter 6) and 2 (see chapter 7) are essential for fostering the expression of creative potential. Finally, in line with Tanggaard's (2014) third pillar, Bernardo experienced episodes of resistance and frustration, e.g. having limited chances to play competitive matches

during adolescence. These may have also contributed to his creative development, especially because he could count on the support of family, peers, and role models to navigate these challenges and transform them into experiences of growth.

In conclusion, this study adds to the growing body of research (e.g. Vaughan et al., 2019; Rasmussen et al., 2020a) that proposes that creativity in sport should be conceptualised as a socio-cultural phenomenon that is situated, distributed, and relational, whose development can benefit from the adoption of transdisciplinary approaches (Vaughan et al., 2019).

Chapter Nine: General Discussion and Conclusion

9.1. Introduction

At the beginning of this thesis (see chapter 1) I referred to a perceive decline of creative expression and development in contemporary associated football embodied by the dearth of ‘number 10s’ reported by high profile coaches and players, e.g. Arsène Wenger, Cesc Fabregas, and confirmed by scholars, e.g. Santos et al., 2016. Considering the importance of creativity not only for successful sporting performances (Kempe & Memmert, 2018) but also for the development of human potential (Vaughan et al., 2019), I set out to investigate this ‘real-world’ issue, focusing on professional football academies. These are singular environments dedicated to the development of prospective professional players (Relvas et al., 2010), often characterised by low tolerance for mistakes and failure (Reilly et al., 2008) and high pressure to perform (Mills et al., 2014).

Expanding our current understanding of creativity in football was also important because sporting creativity is often associated with magical thinking (Leso et al., 2017), and mythological and bellicose analogies that compare successful performers with ‘gods’ and ‘warriors’ (see chapter 3). While research on sporting creativity has developed at a fast pace during the last 20 years, this process has been characterised by a largely mono-paradigmatic approach imported from cognitive psychology and inspired by logical positivism (Fardilha & Allen, 2019). Nonetheless, during the last decade, there have been signs that the field is starting to move towards a ‘We-paradigm’ Glăveanu, 2010a), with different programmes being proposed to foster the creative development of children (Fardilha & Allen, 2019). Furthermore, there have been suggestions that creativity in sport should be conceptualised as a ‘developmental resource’ (Rasmussen et al., 2017) accessible to everyone and a ‘wicked challenge’ influenced by a myriad of socio-cultural factors (Vaughan et al., 2019). If better understood, these could lead to a more effective development of human potential.

However, there are also some obstacles that may condition our ability to expand our knowledge regarding sporting creativity, especially within the football domain. For example, throughout the research process that led to this thesis, I experienced first-hand what Morrow and Howieson (2014) described as the traditionally closed nature of professional clubs, suspicious of outsiders. At the beginning of study 1, I contacted several dozens of clubs in different countries (at the time I had planned to include Germany in the group of nations where I would

conduct interviews) to invite them to participate in my research, with only one club replying and refusing to contribute. Without the valuable assistance of gatekeepers and their contact network, this thesis would have not have been possible. Nonetheless, this does not mean that practitioners are averse to scientific knowledge. On the one hand, the increasing 'commercialisation' of football has transformed clubs into businesses (Morrow & Howieson, 2014). These aim to gain competitive advantage over their opponents by creating their own research and development or 'insights' departments (McCall et al., 2016) and closing themselves to outsiders (Morrow & Howieson, 2014).

During informal conversations parallel to interviews for study 1, HACs and HARs explained that they had very busy schedules and did not usually feel inclined to read academic research for two reasons: on the one hand, they experienced difficulties in accessing it (paywalls and academic language); on the other, they did not feel that it provided accurate representations of their environments, thus not adding value to their day-to-day practices. Notwithstanding, after initial difficulties gaining access to professional football academies, participants proved not only friendly but also knowledgeable and cooperative. They challenged my perspectives and added value to this thesis through their contributions, which have influenced – and enriched – the following discussion and conclusions. In that vein, I support Montuori's (2019) claim that it is important to bring scholars and practitioners closer if we wish to be more successful in tackling complex, 'real-world' problems, like conceptualising and developing creativity in football.

Indeed, after overcoming initial suspicions of practitioners (Morrow & Howieson, 2014), who earlier saw me as an outsider, I could develop the first ever study that compared and contrasted perceptions of creativity from Heads of Coaching and Recruitment in multiple academies and three different countries. Thus, expanding previous work by other scholars with coaches in single clubs (e.g. Leso et al., 2017; Rasmussen et al., 2019).

Embracing the collaborative, participatory spirit that characterises integrative transdisciplinarity (Montuori, 2019) also enabled me to include hitherto largely 'unheard voices' with regards to sporting creativity. For example, those of young academy players themselves, who could give first-person accounts of their beliefs and experiences in relation to creative development. Finally, I

could gain unusual access to a ‘super-elite’ player like Bernardo Silva, his former coaches and significant others (e.g. mother). This resulted in the first ever biographical case-study of a top level footballer focused on creativity, extending the still small body of literature devoted to the lives of eminent players inaugurated by Martin and Cox (2016). In the next sections, I will discuss the key findings/contributions from my research.

9.2. Reconceptualising creativity in association football

Participants from all studies that compose this doctoral thesis recognised, to a large extent, the value of definitions of sporting creativity proposed by scholars, such as Memmert’s (2011) ‘tactical creativity’, and especially Orth et al.’s (2017) recent association between motor creativity and adaptability. They also recognised the importance of developing traits and skills that have been positively correlated with creative behaviour, e.g. attention (Memmert & Fuller, 2007; Memmert, 2011). Nonetheless, while it became clear that positivist-inspired conceptualisations of sporting creativity may be relevant for the evaluation of the ‘creativeness’ of current performances (via traditional criteria like originality, fluency, flexibility, and surprise), they have limited usefulness with regards to the explanation of such performances or, more importantly, the prediction of future potential. Moreover, while such conceptualisations may lead to highly valid and reliable assessments of creative performance in academic terms, they fail to account for contextual variability that in turn, limits their practical applicability in the ‘real world’.

Thus, throughout studies 1 to 3 (chapters 6 to 8) it became clear that existing conceptualisations of creativity in football must be updated to better capture the complexity of the phenomenon. Indeed, accounts from multiple stakeholders – e.g. HACs, HARs, coaches, parents, sport psychologists, teachers – support the idea that creativity in association football should be framed in line with Glăveanu’s (2010a) ‘We-paradigm’, i.e. characterised as a dynamic (Corazza, 2016; Tanggaard, 2019) situated, distributed, and relational phenomenon (Tanggaard, 2012; Glăveanu, Tanggaard & Wegener, 2016; Lebuda & Glăveanu, 2019).

9.2.1. Creativity in football is dynamic

As shown in study 1 (chapter 6), creativity in association football is a dynamic construct, evolving in line with the metamorphosis of the Game. Football has undergone a dramatic metamorphosis since it started as an amateur game in the 19th century to become a multi-billion dollar industry (Morrow & Howieson, 2014) with far-reaching political, socio-cultural, and economical influence. The way in which the game is played also evolved over time, namely due to phenomena of 'blending' caused by staff (Peeters, Mills, Pennings, & Sung, 2019) and player migration (Lago-Penãs. Lago-Peñas, & Lago, 2019) that affected traditional national playing styles.

Additionally, since the creation of football there have also been relevant changes in tactical systems used by teams - from the 'pyramid' and 'W-M' to the 4:3:3, 4:4:2 or 3:4:3 (Wilson, 2008). While the dearth of so-called 'number 10s', i.e. central attacking midfielders mainly focused on the strategic organisation of the attacking phase, could be perceived as a sign of a decline of creativity in football, HACs and HARs were unanimous in suggesting a perceived increase of creative performances by players in other positions that were not traditionally associated with the construct, e.g. goalkeepers and full-backs. Consequently, in opposition to Memmert and colleagues' (2010) claim that creativity can only occur in the offensive phase, practitioners clarified that creativity can occur in any phase of the game and in any area of the pitch. Moreover, creative affordances vary in tandem with the evolution of the game and its surroundings. In that vein, practitioners across studies 1 and 2 highlighted how societal change – characterised by increasing scheduling and sedentariness across all ages, as well as urbanisation and digitalisation – negatively impacted motor skill competency of young players in so-called WEIRD countries (Heine, & Norenzayan, 2010), which in turn affected their capacity for exploratory behaviour.

The dynamic nature of creativity in football should lead to it being considered multidimensionally, as I suggested in chapter 6, potentially through the conjugation of four main pillars: a) 'what', i.e. the type of action/technical gesture; b) 'where', i.e. the area of the pitch where the action is performed, the conditions of the pitch (e.g. type of surface, meteorological impact), c) 'when', i.e. the moment of the game in which the action is performed (e.g. phase of play and or chronological time (beginning/end of the match)); and d) 'who', i.e. the

type/position of the player performing the action (e.g. goalkeeper, winger). In addition to these four pillars, a fifth, all-encompassing pillar – 'why' – reflecting on the wider socio-cultural context in which the player and her/his team are inserted should be considered when assessing creativity in football.

9.2.2. Creativity in football is situated

Sternberg (2019) suggested that creativity should be evaluated locally, i.e. taking into consideration local norms and values. Additionally, Rasmussen and colleagues (2019) explained that perceptions of creativity may be affected by the personal biographies of coaches. My research supports these perspectives: in study 1, practitioners reported that varying geographical (e.g. regional, national, international), historical, and socio-cultural characteristics of clubs and their surroundings resulted in different valuations of creativity. This means that a technical gesture that may be deemed common – 'normal' – by someone in one region or country could be evaluated as very creative in another area where football is not popular nor developed. Consequently, the scope of incentives and opportunities for exploratory behaviour could vary across locations, impacting young footballers' ability to fully express their creative potential.

Therefore, although participants in all studies agreed with Gagné's (2013) proposal that natural abilities may result in more or less propensity for creative behaviour, i.e. creative potential, they were also unanimous in contending that such abilities require stimulating environments to be expressed fully. In study 1 participants referred that the increasing professionalisation and formalisation of developmental environments, e.g. academies, appeared to be contributing to player homogenisation. In turn, study 3 showed how Bernardo Silva had the continued support of a liberal family that fostered curiosity and provided him with the opportunity to experience different environments and sports and engage in self-initiated, informal and unstructured play in parallel to his competitive development. Furthermore, he attended a school that had creativity as a core value, and benefited from coaching aligned with a constraints-led approach (Renshaw et al., 2019) that was adapted to his individual characteristics and stage of development. Thus, it is evident that conceptualisations of creativity in football should no longer focus "on the individual alone, isolated from his/her social, material, and cultural context" (Glăveanu et al., 2018, p.4).

9.2.3. Creativity in football is distributed and relational

Although the 'He-paradigm' (Glăveanu, 2010a) and the 'lone genius myth' (Montuori & Purser, 1999) are commonly associated with medieval and romantic eras (see chapter 2), in contemporary sport there are still frequent accounts of athlete 'deification' (see chapter 3). However, in this thesis I have shown that conceptualisations of creativity in football should follow the 'socio-cultural turn' in 'general' creativity research that recognises the phenomenon as "distributed, collective, and socially embedded" (Sawyer, 2014, p.xiii). The developmental pathway of Bernardo Silva (see chapter 8) offers a good example of how the development of creative potential, even at the super-elite level (Rees et al., 2016) emerges from a complex web of longitudinal and interconnected relations between multiple stakeholders – e.g. player, parents, teachers, coaches, sporting directors - and varying environments – sporting and non-sporting, formal and informal. When such constructive alignment between stakeholders and environments is limited or inexistent – e.g. due to parental pressure, focus on immediate results and financial revenues, lack of opportunities for the acquisition of domain-specific knowledge and/or informal playing (see chapters 6 and 7 for further detail) -, creative potential, even at the highest level, may remain unfulfilled. In that vein, I concur with Morin (2002;2008) in suggesting that traditional mono-disciplinary, lab-based research approaches fail to address the complexity and interconnectedness associated with creativity, especially when considering such an increasingly globalised and hyper-commercialised (Morrow & Howieson, 2014; Howieson & Morrow, 2014; Giulianotti, 2012) sport like association football, inclusively with regards to youth development (see chapter 4).

9.3. Developing creativity in youth professional football

The development of sporting creativity has deserved the attention of scholars and practitioners in recent years. Indeed, different programmes for enhancing sporting creativity have been proposed by researchers (e.g. Memmert's (2015) TCA, Santos et al.'s (2016) CDF and Rasmussen and colleagues' (2016) TCSP). Similarly, some NGBs – e.g. English FA – offer practitioners courses dedicated to creative development in football (English FA, 2017; Pain, 2020). However, the vast majority of research conducted to date has focused almost

exclusively on what happens on the playing ground, i.e. on training strategies (e.g. deliberate practice, deliberate play) and programmes that may lead to young players being able to display higher numbers of original, surprising, and adequate behaviours (Fardilha & Allen, 2019). In the next sections, I explain the importance of moving beyond these strategies when reflecting on creative development in football.

9.3.1. The value of transdisciplinary approaches for studying creative development in football academies

Very recently, some authors (Vaughan et al., 2019; Rasmussen et al., 2020b) have started to pay attention to wider socio-cultural factors that may promote or hinder creative development. In this thesis, the adoption of Montuori's (2019) integrative transdisciplinarity approach has allowed me to identify important challenges and opportunities for creative development in football that had not been uncovered before (see chapter 7). These factors – e.g. organisational, educational, and parental - are not exclusive to individual players nor restricted to the field of play. For example, in study 2 I revealed how job insecurity/unequal salary structures within highly pressurised environments like football academies may generate 'cascade effects' that lead to a focus on immediate results, which in turn diminish opportunities for experimentation and risk-taking. It enabled me as well to paint a 'clearer picture' of the impact that decisions at one level of a club (e.g. the board) may have on another (e.g the players). For example, through the lack of provision of informal spaces for practice when approving the design of a new academy building or the decision of removing players from external schools and bringing them to be educated in the academy, involuntary challenges to creative development may emerge.

Other than 'weaving together' knowledge from different disciplines, integrative transdisciplinarity (Montuori, 2019) aemphasises the importance of more collaborative, participatory research, i.e. closer dialogues between academics and practitioners. Through interviews and informal dialogues with practitioners in study 1 (chapter 6) it became evident that they were largely unfamiliar with academic research related to their fields, something that they justified with a lack of accessibility, e.g. pay-walls and 'hermetic' language of academic articles. Mitigating such scholarly gap is important, given that academy staff at all levels could benefit, for example, from interacting with a growing body

of evidence regarding the promising impact of ecological dynamics and constraints-led approaches on creative development in sport (e.g. Vaughan et al., 2019). Indeed, Vaughan and colleagues suggest that "practitioners might aim to design movement environments that encourage the discovery and exploration of novel affordances to better foster creative moments for achieving potential" (p.12). That would imply the constant adaptation of training drills to the personal constraints of players – as in Bernardo Silva's early steps in Benfica football school (see chapter 8) – instead of a reliance on pre-determined metrics and player profiling (see chapter 7) that can lead to player homogenisation and early positional specialisation, thus reducing opportunities for exploratory behaviour. Furthermore, these environments require, for example, the development of psychologically safe environments where young players feel motivated to experiment and take risks. Indeed, studies 2 (chapter 7) and 3 (chapter 8) proved, from different angles, how collaborative interactions between academy staff, parents, and schools, are crucial to provide young players with a balanced mix of autonomy and competence support (Cooper & Allen, 2020), that can consequently boost exploratory behaviour and creative development.

9.3.2. The importance of breaks, gaps, and extra-football experiences

In line with HACs and HARs suggestions in study 1 (see chapter 6), studies 2 and 3 showed that some of the most important influences for the creative development of young academy players were experienced outside formal competitive environments. However, the increasing marketisation of football (Morrow & Howieson, 2014) has affected academies (Christensen & Sørensen, 2009; Relvas et al., 2010) and resulted in the commodification of young players (Mills et al., 2014). Not rarely, as discussed in chapter 4, clubs may rely on the revenues resulting from the sale of young prospects, for financial stability (Sarmento, Anguera, Pereira & Araújo, 2018). Furthermore, there have been significant investments in the professionalisation of youth football, in both infra-structures and training conditions (e.g. EPPP, 2011). Nonetheless, well-intended actions may have negative consequences. Children are spending an increasing amount of time in academies, where they are permanently monitored by a myriad of coaches and supporting services (e.g. nutrition, sport science, sport psychology, social-educational support, etc.) and have their progress recorded by 'performance clocks' (EPPP, 2011). However, in line with Tanggaard's (2014) findings in

educational settings, studies 2 and 3 highlighted the importance of diversifying activities (e.g. playing different sports, doing arts and crafts) and having breaks and informal spaces outside of academies for the promotion of experimentation and risk-taking. Indeed, the focus group conducted in study 2 (chapter 7) revealed that school breaks were often used by young players to try new tricks and skills without the fear of making mistakes. This is because, even if involuntarily, participants associated the academy with constant surveillance, evaluation, and pressure to perform. Therefore, increasing 'professionalisation' within academy settings, and consequently, the time young people spend in these environments (e.g. by bringing school to the interior of academies) may be counter-productive. It may lead to 'athletic identity foreclosure', i.e. to a state in which "nothing else has serious psychological existence for the young footballers" (Christensen & Sørensen, 2009, p.129). This can affect their psychological well-being and hinder creative development.

9.3.3. Parental attitudes are 'key' for creative development

While still unexplored in sporting creativity research, participants across all studies (chapters 6 to 8) unanimously considered parental attitudes towards their children's football activities as decisive for promoting – or hindering - creative development. For example, in study 1, HACs and HARs reported cases of parents who over-emphasised their children's achievements from very early ages, e.g. focusing on immediate results and broadcasting videos of their tricks and skills on social media. Worryingly, participants in studies 1 and 2 described episodes of parents who displayed abusive or violent behaviour, e.g. death threats to coaches (see chapter 7), which were deemed unacceptable by some clubs and led to distance themselves from parents. This meant that in order to protect young players from parental pressure, some clubs limited access to training sessions and other information relative to player progression. Such parental behaviours may prevent the development of creative potential, as shown in study 2, (chapter 7), with a young player reporting how parental pressure to become a professional player resulted in him experiencing increased stress and risk-avoidance.

Also in study 2, a parent disclosed an episode in which he involuntarily pressurised his son before a tournament. In opposition, in study 3 there were multiple examples of how Bernardo Silva's parents supported his passion for football while keeping a healthy distance, i.e. not intervening when he did not get

many competitive opportunities during adolescence, since their son reported feeling happy at the club. Indeed, Bernardo's parents acted as 'agents of moderation', helping their child managing and mitigating eventual situations of stress and disappointment. Similar behaviours should be encouraged in order to foster creative development, based on two premises: on the one hand, Harwood and colleagues (2010) highlighted the importance of parents helping their children's dealing with difficult moments in their sporting careers, e.g. premature release, that could lead to early drop-out from sport. While this may be problematic with regards to psychological well-being, it may also prevent extended engagement with sport and the acquisition of specific knowledge, which Tanggaard (2014) deemed essential for creative learning. On the other hand, Tanggaard (2014) has emphasised the importance of setbacks for creative learning, suggesting that "the experience of being lost, of being disoriented, of being held back, or simply being frustrated can prompt a creative opportunity to arise" (2014, p.111). This was particularly evident in Bernardo Silva's developmental journey, given that due to the support of his parents and role models, e.g. Fernando Chalana, he was able to persist despite the lack of regular competitive opportunities during adolescence.

Finally, it is important to stress that while very visible, 'over-engaged' parents are a minority in sport (Knight & Newport, 2020). Furthermore, as shown in study 2, parents face multiple stressors as a result of having to help their children navigate between sporting, school, and family commitments. They also bear financial and emotional costs and disruptions to their own personal and professional duties (Harwood, Drew, & Knight, 2010). Thus, clubs could potentially benefit from establishing closer relationships with parents, and explaining them how their behaviour can impact on the development and performance of young players, including with regards to creative development (e.g. when parents try to avoid that their kids experience situations of resistance and frustration).

9.4. Key findings and implications for applied practice

This thesis contributed, in multiple ways, to improving our understanding of a complex, multi-dimensional phenomenon like sporting creativity:

1. It questioned and complemented prevalent conceptualisations of the construct, excessively focused on intra-individual traits and skills - inspired by logical positivist paradigms. Based on evidence gathered from highly qualified practitioners (HACs and HARs) and other relevant stakeholders (e.g. parents) across multiple academies located in different countries, I showed the benefit of embracing the 'socio-cultural turn' proposed by creativity scholars (e.g. Sawyer, 2014). Indeed, if scholars and practitioners wish to increase the effectiveness of training programmes and other strategies directed at the enhancement of creative expression in association football, it is essential that they look beyond the pitch, and seek a consistent, constructive alignment between different stakeholders that play important roles in developmental processes (e.g. players, parents, coaches, scouts, academy directors, sport psychologists, NGBs, schools, local and government representatives).

2. It showed that creativity in association football is a fluid, dynamic, and situated construct that evolves in tandem with the Game and the wider society, and thus should be evaluated locally (Sternberg, 2019). While so-called number 10s may be an 'endangered species' due to the way the game is currently played, there has been a 'democratisation' of creativity across different roles which were earlier devoted to following strict remits, e.g. goalkeepers, defenders. Moreover, it is difficult to predict how the Game will look like in the future, therefore practitioners should remain open-minded and design highly representative tasks with frequent opportunities for exploratory behaviour. Player-profiling practices should be questioned and professional academies should aim to adapt, as much as possible, to the varying personal constraints and developmental stages of young players. In that vein, the creation and frequent revision of personal development plans for each academy player could prove fruitful in the long-term.

3. It challenged prevailing conceptualisations of eminence aligned with the 'lone genius myth' (Montuori & Purser, 1999) and the 'He' and 'I' paradigms (Glăveanu, 2010a). Instead, I showed that although there may be an important innate element to sporting creativity, there are multiple stakeholders and socio-cultural factors that play a key role in the emergence – or suppression – of its expression, i.e. 'epigenetics of sporting creativity', even at the highest level.

4. It introduced Tanggaard's (2014) situated model of creative learning as a meaningful framework to reflect on creative development in association football

from multiple angles, i.e. not only as a basis for the planning and implementation of long-term developmental pathways in academies, but also as a useful model to explain creative development retrospectively at the highest – eminent – level. Therefore, senior staff within academies could benefit from using Tanggaard's (2014) model to evaluate current practices and improve future initiatives aimed at the promotion of creative development in their environments.

5. It confirmed the promise of transdisciplinary approaches with regards to the study of sporting creativity, particularly in professional football academies. The participatory nature of integrative transdisciplinarity (Montuori, 2019) allowed me to compare and contrast the 'insider' perspectives of multiple stakeholders (HACs, HARs, coaches, sport psychologists, parents, etc.) with existing literature. This allowed me not only to present a work with enhanced 'real-world' applicability, but also to reveal a web of important connections and factors previously unknown to affect sporting creativity (e.g. job insecurity of staff, parental pressure). Finally, while at times it may be perceived as 'over-inclusive', the spirit of integrative transdisciplinary also allowed me to adapt a non-sporting theoretical framework from the field of education – i.e. Tanggaard's (2014) situated model of creative learning – and prove its usefulness for the explanation and promotion of creative development.

9.5. Limitations and directions for future research

While this thesis tried to provide a balanced and comprehensive discussion of the phenomenon of creativity in professional football academies, there are several limitations to my work that require cautious interpretation of its findings and recommendations. Firstly, while the sample of academies visited may be larger than other studies conducted to date, it still represents a very small percentage of these institutions. Moreover, this thesis reinforces the prevailing body of creativity research conducted in WEIRD - "Western, educated, industrialized, rich and democratic" societies (Henrich, Heine, & Norenzayan, 2010, p. 29). Similarly, it fails to address the worrying under-representation of women participants in sporting creativity and football-related academic literature, a gap that future research must address.

Scheduling and budget limitations meant that interactions with participants across the three original studies were, in most cases, limited to a single interview.

This could impact the trustworthiness of findings. The same time and money constraints resulted in a limited immersion time in the academy (1 month) in which study 2 took place. However, contact with coaches, senior staff, and head psychologist was maintained and allowed for further discussions, including of preliminary findings. Furthermore, it must be admitted that the scarcity of research on sporting creativity – including on professional football academies – and the subjectivity inherent to qualitative and transdisciplinary research requires further investigations to confirm my findings, which to some extent can be deemed speculative. Notwithstanding, despite the inherent biases of any inquirer (as discussed in chapter 5), I have tried as much as possible to support my interpretations of the data with evidence provided by practitioners and peer-reviewed work authored by other scholars.

By accepting that creativity is a dynamic (Corazza, 2016; Tanggaard, 2019) situated, distributed, and relational phenomenon (Tanggaard, 2012; Glăveanu, Tanggaard & Wegener, 2016; Lebuda & Glăveanu, 2019), I must also accept that the time and contextual-boundedness of my findings, namely in the biographical case-study of Bernardo Silva (chapter 8). This means that Bernardo's journey may be no more than an exception among 'super-elite' (Rees et al., 2016) players recognised as creative. Moreover, while I was able to identify multi-factorial interactions between different stakeholders, environments, and levels of analysis, it is not possible to guarantee which are the most influential with regards to creative development in youth professional football. Scholars aiming to extend our understanding of the field at multiple levels should aim not only for longer periods of immersive research in similar environments, i.e. professional academies, but also to analyse the lives of other 'super-elite' players recognised by their creative displays.

Nonetheless, the consistency of findings across all studies, together with the steps taken to enhance their trustworthiness (see chapter 5), suggests there could be tentative transferability of my findings to similar settings, i.e. professional football academies, which future research should evaluate. Finally, the use of Tanggaard's (2014) situated model of creative learning as an analytical framework was helped to focus my investigations and more clearly illuminate parallels/consistencies or inconsistencies and uniqueness of the cases. Moreover,

its flexibility proved useful to extend our understanding of how creativity might be developed among players in football academies.

9.6. Conclusion

In this thesis I have confirmed the importance of departing from positivist-informed conceptualisations of creative development in association football overly focused on skill trainability. I suggest that, more than a teaching/training process of natural abilities, creative development is a broader, non-linear learning process, dependent on multiple interactions between a myriad of stakeholders, across different formal and informal, socio-cultural and material environments. In that vein, I propose that creativity in football is a socio-cultural phenomenon, characterised by a situated, distributed, and relational nature, aligned with Glăveanu's (2010a) 'We-paradigm'.

Moreover, this thesis resulted in the first application of Tanggaard's (2014) situated model of creative learning as an analytical framework in sporting settings. The use of its three pillars – (1) immersion in the topic of interest, traditions and in the subject matter; (2) experimentation and inquiry learning; and (3) resistance from the material of interest – as sensitizing concepts (Patton, 2014) provided a useful platform for the identification and discussion of challenges and opportunities for creative development in professional academy settings that, to my knowledge, had not yet been discussed in the literature, e.g. the impact of academy's architecture, job insecurity, role models, and breaks/gaps for creative development in football. Finally, through a biographical case-study of super-elite (Rees et al., 2016) footballer Bernardo Silva, I showed how an eclectic, diverse education may contribute to creative development in association football. Indeed, parents who act as 'agents of moderation' with regards to their children's career, i.e. providing them with a blend of structure and autonomy support, may positively contribute for the expression of creative potential at its highest level.

References

Adler, K., Salanterä, S. & Zumstein-Shaha, M. (2019) Focus Group Interviews in Child, Youth, and Parent Research: An Integrative Literature Review, *International Journal of Qualitative Methods, 10.1177/1609406919887274*

Aggerholm, K. (2015) *Talent Development, Existential Philosophy and Sport: On Becoming an Elite Athlete,* Routledge

Aggerholm, K., Jespersen, E., & Ronglan, L. T. (2011). Falling for the feint - an existential investigation of a creative performance in high-level football. Sport, Ethics and Philosophy, 5(3), 343–358. doi:10.1080/17511321.2011.602589

Albert, R.S. (1992) *Genius and Eminence (*2nd edition) Pergamon Press

Amabile, T. M. (1996). *Creativity in context: Update to "The Social Psychology of Creativity."* Westview Press.

Amabile, T. M., & Pratt, M.G. (2016) "The Dynamic Componential Model of Creativity and Innovation in Organizations: Making Progress, Making Meaning." *Research in Organizational Behavior,* 36, 157–183.

Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology, 45*(2), 357–376. doi:10.1037/0022-3514.45.2.357

Amabile, T.M. (1988) A Model of Creativity and Innovation in Organizations. Research in Organizational Behavior, 10, 123-167.

Amabile, T.M. (1995) Attributions of Creativity: What Are the Consequences? Creativity Research Journal, Vol.8, no.4, pp.423-426, doi: 10.1207/s15326934crj0804_10

Amabile, T. M. (1997) Motivating *creativity* in organizations: On doing what you love and loving what you do. *California Management Review*, 40, 39-58.

Amado, D., Sánchez-Olival, D., González-Ponce, I., Pulido-González, J.J., & Sánchez-Miguel, P.A. (2015) Incidence of Parental Support and Pressure on Their Children's Motivational Processes towards Sport Practice Regarding Gender, *PloS ONE*, 10(6), e0128015, doi:10.1371/journal.pone.0128015

Amato, M.P., Bertolotto, A., Bruneli, R., Cavalla, P., Goretti, B., Marrosu, M.G., Patti, F., Pozzili, C., Provinciali, L. Rizzo, N., Strobelt, N., Tedeschi, G., Trojano, M., & Comi, G. (2017) Management of pregnancy-related issues in multiple

sclerosis patients: the need for an interdisciplinary approach, *Neurological Sciences*, 38, 1849-1858

Anderson, N, Potočnik, K., & Zhou, J. (2014) Innovation and Creativity in Organizations: A State-of-the-Science Review, Prospective Commentary, and Guiding Framework, *Journal of Management*, 40(5), 1297-1333, doi: 10.1177/0149206314527128

Apostel, L., Berger, G., Briggs, A., & Michau, G. (1972) *Interdisciplinarity: Problems of Teaching and Research in Universities*, Organization for Economic Co-Operation and Development.

Araújo, D., Davids, K. & Hristovski, R., (2006) The ecological dynamics of decision making in sport, *Psychology of Sport and Exercise*, 7(6), 656-676

Araújo, D., Hristovski, R., Seifert, L., Carvalho, J., & Davids, K. (2017) Ecological cognition:Expert decision-making behaviour in sport, *International Review of Sport and Exercise Psychology*, 12(1), 1–25, doi:10.1080/1750984X.2017.1349826

Arslan, K., Akpunar, F., & Ulucan, K. (2016). Can Neurogulin 1 be an important biomarker for creativity in sports? Annals of Applied Sport Science, 4(1), 01–02. doi:10.7508/aass.2016.01.001

Associated Press (2019 May 21) *English Premier League broadcast rights rise to $12 billion*, https://apnews.com/article/c720239949584d478eb4b1ee7fa6f042

Athletics Canada (2015) *Long Term Athlete Development*, https://athletics.ca/wp-content/uploads/2015/01/LTAD_EN.pdf

Augsburg, T. (2014) Becoming Transdisciplinary: The Emergence of the Transdisciplinary Individual, *World Futures*, 70(3-4), 233-247

Augustus, L. (2019 March 4) '*The player you are, the talent that you have, it is incredible': Benjamin Mendy compares Bernardo Silva to Pablo Picasso as Manchester City defender sends team-mate heartfelt message*, Mail Online,.*https://www.dailymail.co.uk/sport/football/article-6770111/Benjamin-Mendy-compares-Bernardo-Silva-Pablo-Picasso-heartfelt-message.html*

Baas, M. (2019) In the Mood for Creativity. In Kaufman, J., & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity, 2nd ed.* (pp. 257-272) Cambridge University Press.

Baer, J., & Kaufman, J. (2019) Assessing Creativity with the Consensual Assessment Technique. In Lebuda, I., & Glăveanu, V. (Eds.) *The Palgrave Handbook of Social Creativity Research* (pp. 27-37) Palgrave Macmillan.

Baker, J. & Côté, J. (2006) Shifting training requirements during athlete development: deliberate practice, deliberate play, and other sport involvement in the acquisition of sport expertise. In Hackfort, D., & Tenenbaum, G. (Eds.) *Essential Processes for Attaining Peak Performance* (pp. 92-108), Meyer & Meyer Sport.

Baker, J., Cobley, S., Schorer, J., & Wattie, N. (Eds.) (2017) *Routledge Handbook of Talent Identification and Development in Sport*, Routledge.

Balagué, G. (2013) *Messi*, Orion Books.

Balyi, I. and Way, R. (1995). Long-term planning for athlete development: The training to train phase. *BC Coach (Canada)*, : 2–10

Balyi , I. & Hamilton , A. (1996) Planning for training and performance: the Training to Win phase , *BC Coach* , 9 – 26

Balyi, I. (2001) Sport System Building and Long-term athlete development in British Columbia, Canada, *Sports Med BC*, 8(1), https://sportmedbc.com/article/long-term-athlete-development-bc-approach

Balyi, I. and Hamilton, A. (2003). Long-term athlete development update: trainability in childhood and adolescence. *Faster, Higher Stronger*, 20: 6–8

Barbot, B & Eff, H. (2019) The Genetic Basis of Creativity: A Multivariate Approach. In Kaufman, J., & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity, 2nd ed.* (pp. 132-147) Cambridge University Press.

Barron, F. (1963) *Creativity and psychological health.* D. Van Nostrand.

Bate, A. (2019 August 25) *How Bernardo Silva conquered his doubts to become a superstar.* Sky Sports, *https://www.skysports.com/football/news/11679/11783618/how-bernardo-silva-conquered-his-doubts-to-become-a-superstar*

Bateson, G. (1972) *Steps to an Ecology of the Mind*, Chandler Publishing Company.

Bateson, G., & Donaldson, R. (1991) *Sacred Unity: Further Steps to an Ecology of Mind*, Cornelia & Michael Bessie Books

Bateson, G. (2002) *Mind and Nature: A Necessary Unity (Advances in Systems Theory, Complexity, and the Human Sciences)*, Hampton Press.

Becker, G. (2014). A socio-historical overview of the creativity–pathology connection: From antiquity to contemporary times. In J. Kaufman (Ed.), *Creativity and mental illness* (pp. 3–24). Cambridge University Press.

Beckmann, J., & Beckmann-Waldenmayer, D. (2019) Talent development in youth football. In Konter, E., Beckmann, J., & Loughead, T.M. (Eds.) *Football psychology: from theory to practice,* Routledge

Beghetto, R. A., & Kaufman, J. C. (2007). Toward a broader conception of creativity: A case for "mini-c" creativity. *Psychology of Aesthetics, Creativity, and the Arts, 1*(2), 73–79. doi: 10.1037/1931-3896.1.2.73

Bellentani, S., Dalle Grave, R., Suppini, A. & Marchesini, G. (2008) Behavior therapy for nonalcoholic fatty liver disease: The need for a multidisciplinary approach, *Hepatology*, 47(2), 746-754

Berry, J., Abernethy, B., & Côté, J. (2008) The contribution of structured activity and deliberate play to the development of expert perceptual and decision-making skill. *Journal of Sport and Exercise Psychology*, 30(6), 685–708, doi:10.1123/jsep.30.6.685

Bimstein, E. & Miskovich, C. (2018) The Need of Interdisciplinary Approach for the Treatment of Children with Down Syndrome with Severe Caries Unintentionally Facilitated by Hypotonia Therapy, *J Clin Pediatr Dent,* 42(4), 299–302. doi: 10.17796/1053-4628-42.4.11

Blackett, A., Evans, A. & Piggott, D. (2017) Why 'the best way of learning to coach the game is playing the game': conceptualising 'fast-tracked' high-performance coaching pathways, *Sport, Education, and Society*, 22(6), 744-758. doi: 10.1080/13573322.2015.1075494

Bloom, B. (Ed.) (1985) *Developing Talent in Young People*, Ballantine Books

Boden, M.A. (1994) Précis of The creative mind: Myths and mechanisms, *Behavioral and Brain Sciences, 17(3), 519 – 531*, doi: 10.1017/S0140525X0003569X

Boden, M. A. (2004). *The creative mind: Myths and mechanisms (2nd ed.)*, New York: Routledge.

Bowers, M. T., Green, B. C., Hemme, F., & Chalip, L. (2014). Assessing the relationship between youth sport participation settings and creativity in adulthood. *Creativity Research Journal,* 26(3), 314–327, doi:10.1080/10400419.2014.929420

Braun, V., Clarke, V., & Weate, P. (2016). Using thematic analysis in sport and exercise research. In Smith, B. & Sparkes, A.C. (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 191–205). Routledge

Bremer, K.L. (2012) Parental Involvement, Pressure, and Support in Youth Sport: A Narrative Literature Review, *Journal of Family Theory & Review, 4(3), 235-248,* 10.1111/j.1756-2589.2012.00129.x

Bridge, M. & Toms, M. (2013) The specialising or sampling debate: a retrospective analysis of adolescent sports participation in the UK, *Journal of Sport Sciences*, 31(1), 87-96, doi:10.1080/02640414.2012.721560

Brislin, R.W. (1970) Back-Translation for Cross-Cultural Research, *Journal of Cross-Cultural Research,* 1(3), 185-216. doi:10.1177/135910457000100301

Brown, G. I., & Gaynor, D. (1967). Athletic action as creativity. *The Journal of Creative Behavior*, 1(2),155–162. doi:10.1002/j.2162-6057.1967.tb00022.x

Brown, G. & Potrac, P. (2009) 'You've not made the grade, son': de-selection and identity disruption in elite level youth football, *Soccer & Society*, 10(2), 143-159, doi:10.1080/14660970802601613

Buekers, M., Ibáñez-Gijón, J., Morice, A., Rao, G., Mascret, N., Laurin, J. & Montagne, G. (2016) Interdisciplinary Research: A Promising Approach to Investigate Elite Performance in Sports, *Quest*, 69(1), 65-79, doi: 10.1080/00336297.2016.1152982

Burke, S. (2016) Rethinking 'validity' and 'trustworthiness' in qualitative inquiry: how might we judge the quality of qualitative research in sport and exercise sciences?. In Smith, B. & Sparkes, A.C. (Eds.) *Routledge Handbook of Qualitative Research in Sport and Exercise* (pp. 330-340) Routledge

Byrge, C., & Hansen, S. (2009) The creative platform: A new paradigm for teaching creativity. *Problems of Education in the 21st Century*, 18, 33–50

Byrge, C., & Hansen, S. (2014) *Enhancing creativity for individuals, groups and organizations: Creativity as the Unlimited Application of Knowledge*, Frydenlund Academic.

Campbell, D. T. (1960). Blind variation and selective retention in creative thought as in other knowledge processes. *Psychological Review*, 67, 380–400

Campos, D. (2014). On creativity in sporting activity: With some consequences for education. *FairPlay, Revista de Filosofia, Ética y Derecho del Deporte*, 2(2), 52–80

Cavallera, G. M., Boari, G., Labbrozzi, D., & Del Bello, E. D. (2011). Morningness-eveningness personality and creative thinking among young people who play recreational sport. *Social Behavior and Personality: An International Journal*, 39(4), 503–518. doi:10.2224/sbp.2011.39.4.503

Champ, F., Nesti, M., Ronkainen, N., Tod, D. & Littlewood, M. (2020) An Exploration of the Experiences of Elite Youth Footballers: The Impact of Organizational Culture, *Journal of Applied Sport Psychology*, 32(2), 146-167, doi:10.1080/10413200.2018.1514429

Cheung, R.H.P. (2012) Teaching for Creativity: examining the beliefs of early childhood teachers and their influence on teaching practices, *Australasian Journal of Early Childhood*, 37(3), 43-51.

Choi, B., & Pak, A.W. (2006) Multidisciplinarity, interdisciplinarity, and transdisciplinarity in health research, services, education and policy, *Clinical Investigative Medicine,* 29(6), 351-364

Chow, J. Y. (2013). Nonlinear learning underpinning pedagogy: Evidence, challenges, and implications. *Quest*, 65(4), 469–484, doi:10.1080/00336297.2013.807746

Christensen, M.K. & Sørensen, J.K. (2009) Sport or school? Dreams and dilemmas for talented young Danish football players, *European Physical Education Review,* 15(1), 115-133 doi:10.1177/1356336X09105214

Christensen, M.K. (2009) “An Eye for Talent”: Talent Identification and the “Practical Sense” of Top-Level Soccer Coaches, *Sociology of Sport Journal*, 26(3), 365-382, doi:10.1123/ssj.26.3.365

Clapham, A. (2018 Jan 11) A day inside Benfica's academy, the production line for European football, *The Guardian*, https://www.theguardian.com/football/these-football-times/2018/jan/11/benfica-academy-world-football-transfers

Clayton, J. (2015) It’s only a game: 150 years of association football, *Soccer & Society*, 16(2-3), 153-155, doi:10.1080/14660970.2014.961370

Coelho, J.N. & Tiesler, N. (2007) The Paradox of the Portuguese Game: The Omnipresence of Football and the Absence of Spectators at Matches, *Soccer & Society*, 8(4), 578-600, doi:10.1080/14660970701440931

Coelho, J.N. (1998) ‘On the border’: Some notes on football and national identity in Portugal”. In Brown, A. (Ed.) *Fanatics! Power, identity and fandom in football* (pp.265–78) New York: Routledge

Collins, C.S. & Stockton, C.M. (2018) The Central Role of Theory in Qualitative Research, *International Journal of Qualitative Methods*, 17, 1-10, doi:10.1177/1609406918797475

Colvin, G. (2008) *Talent Is Overrated: What Really Separates World-Class Performers from Everybody Else*, Portfolio.

Cooper, D. & Allen, J.B. (2018) The coaching process of the expert coach: a coach led approach, *Sports Coaching Review*, 7(2), 142-170, 10.1080/21640629.2017.1361168

Cooper, D. & Allen, J.B. (2020) "I Don't Want to Give Them My Brain for the Day...and Then Take It Back": An Examination of the Coach-Created Motivational Climate in Adult Adventure Sports, *International Sport Coaching Journal*, 7(2), 175-188, doi:10.1123/iscj.2019-0026

Corazza, G. (2016) Potential Originality and Effectiveness: The Dynamic Definition of Creativity, *Creativity Research Journal*, 28(3), 258-267, doi:10.1080/10400419.2016.1195627

Côté, J. (1999) The Influence of the Family in the Development of Talent in Sport, *The Sport Psychologist*, 13(4), 395-417, doi:10.1123/tsp.13.4.395

Côté, J. & Hay, J. (2002) Family influences on youth sport performance and particpation. In Silva, M. & Stevens, D.E. (Eds.) *Psychological Foundations of Sport* (pp.503-519) Boston:Allyn & Bacon

Côté, J., Strachan, L. & Fraser-Thomas, J. (2008) Participation, personal development, and performance through youth sport. In Holt, N.L. (Ed.) *Positive Youth Development* (pp.34-46), Oxon:Routledge

Côté, J., Lidor, R. & Hackfort, D. (2009) ISSP position stand: To sample or to specialize? Seven postulates about youth sport activities that lead to continued participation and elite performance, *International Journal of Sport and Exercise Psychology*, 7(1), 7-17 doi:10.1080/1612197X.2009.9671889

Cox, C. (1926). *The early mental traits of three hundred geniuses*. Stanford, CA: Stanford University Press

Coyle, D. (2009) *The Talent Code: Greatness Isn't Born. It's Grown. Here's How,* Bantam.

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (3rd ed.).* Thousand Oaks, CA: Sage Publications.

Cronin, L. & Allen, J.B. (2015) Developmental Experiences and Well-Being in Sport: The Importance of the Coaching Climate, *The Sport Psychologist*, 29(1), 62-71, doi:10.1123/tsp.2014-0045

Cropley, A. (2006). In praise of convergent thinking, *Creativity Research Journal*, 18(3), 391–404. doi:10.1207/s15326934crj1803_13

Cruz, V. (2019, June 8) "As redes sociais estão a prejudicar a qualidade de vida. Palavra do neurocientista António Damásio [Social media are damaging the quality of life. Words of neuroscientist António Damásio]", *Expresso*, https://expresso.pt/sociedade/2019-06-08-As-redes-sociais-estao-a-prejudicar-a-qualidade-de-vida.-Palavra-do-neurocientista-Antonio-Damasio

Csikszentmihalyi, M. (1996). *Creativity: Invention, flow and the psychology of discovery and invention*. New York: Harper Collins

Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp.313-335) Cambridge: Cambridge University Press.

Csikszentmihalyi, M. (2014) *The Systems Model of Creativity: The Collected Works of Mihaly Csikszentmihalyi,* Springer

Cushion, C. & Jones, R.L. (2006) Power, Discourse, and Symbolic Violence in Professional Youth Soccer: The Case of Albion Football Club, *Sociology of Sport Journal,* 23, 142-161

DeDreu, C., Baas, M., & Nijstad, B.A. (2008) Hedonic Tone and Activation Level in the Mood-Creativity Link: Toward a Dual Pathway to Creativity Model, *Journal of Personality and Social Psychology*, 94(5), 739-756

Denzin, N. (1978) *The Research Act (2nd ed)* New York: McGraw-Hill

Diedrich, J., Benedek, M., Jauk, E., & Neubauer, A. C. (2015). Are creative ideas novel and useful?, *Psychology of Aesthetics, Creativity, and the Arts*, *9*(1), 35–40, doi:10.1037/a0038688

Dietrich, A., & Audiffren, M. (2011). The reticular-activating hypofrontality (RAH) model of acute exercise. *Neuroscience and Biobehavioral Reviews*, 35, 1305–1325.

Dietrich, A. (2015) *How Creativity Happens in the Brain*, Palgrave Macmillan

Dietrich, A., & Haider, H. (2017, January). A neurocognitive framework for human creative thought. *Frontiers in Psychology*, 7, 1–7. doi:10.3389/fpsyg.2016.02078

Dietrich, A. (2019) Types of creativity, *Psychonomic Bulletin & Review,* 26, 1-12

DiFiori, J.P., Benjamin, H., Brenner, J., Gregory, A., Jayanthi, N., Landry, G., & Luke, A. (2014) Overuse injuries and burnout in youth sports: a position statement from the American Medical Society for Sports Medicine, *British Journal of Sports Medicine,* 48(4), 287-288

Dorsch, T., Smith, A. & Dotterer, A. (2016) Individual, relationship, and context factors associated with parent support and pressure in organized youth sport, *Psychology of Sport and Exercise*, 23, 132-141

Drazin, R., Glynn, M., & Kazanjian, R. (1999) Multilevel Theorizing about Creativity in Organizations: A Sensemaking Perspective, *Academy of Management Review*, 24(2), 286-307, doi: 10.5465/amr.1999.1893937

du Plessis, C. (2017) The method of psychobiography: presenting a step-wise approach, *Qualitative Research in Psychology,* 14(2), 216-237, doi:10.1080/14780887.2017.1284290

Dul, J. (2019) The physical environment and creativity: a theoretical framework. In Kaufman, J. & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity* (pp. 481–510) Cambridge: Cambridge University Press

Durand-Bush, N. & Salmela, J. (2002) The Development and Maintenance of Expert Athletic Performance: Perceptions of World and Olympic Champions, *Journal of Applied Sport Psychology*, 14(3), 154-171, doi:10.1080/10413200290103473

Ďuriček, M. (1992). Creativity in sports talents: Possibilities and limitations. *Studia Psychologica*, 34(2),175–182.

Edwards, J. (2019 Jun 3) Formidables in focus: Bernardo Silva, *Manchester City*, https://www.mancity.com/news/first-team/first-team-news/2019/june/man-city-bernardo-silva-fourmidables-in-focus

Edwards, H. (2020 July 8) No more Bergkamps? The big victims of the "unfortunate" tactical trend highlighted by Fabregas, *Squawka*, https://www.squawka.com/en/no-10s-decline-tactical-trend/

Elsey, B (2017) Introduction: Marking the Field. In Elsey, B. & Pugliese, G. (Eds.) *Football and the boundaries of history: critical studies in soccer* (pp.1-10) Springer

English Football Association (2017 Jan 30) The FA launches free ‘developing creative players’ online course, *The FA*, https://www.thefa.com/news/2017/jan/30/developing-creative-players-free-online-course-300117

Erickson, K., Côté, J. & Fraser-Thomas, J. (2007) Sport Experiences, Milestones, and Educational Activities Associated with High-Performance Coaches’ Development, *The Sport Psychologist*, 21(3), 300-316, doi:10.1123/tsp.21.3.302

Ericsson, K. A.,Krampe, R., & Tesch-Römer, C. (1993) The role of deliberate practice in the acquisition of expert performance, *Psychological Review*, 100(3), 363-406

Ericsson, K. A. (2017). Expertise and individual differences: The search for the structure and acquisition of experts’ superior performance. *Wiley Interdisciplinary Reviews: Cognitive Science*, 8(1-2), 1–6. doi:10.1002/wcs.1382

Erikson, E.H. (1958).*Young Man Luther*. New York:Norton.

ESPN (2019) ESPN FC 100: Liverpool, Man City dominate our ranking of world's best soccer players, *ESPN Soccer*, https://www.espn.com/soccer/blog-espn-fc-united/story/3990866/espn-fc-100-liverpoolman-city-dominate-our-ranking-of-worlds-best-soccer-players#attackingmidfield

Fang, F. & Casadevall, A. (2011) Reductionistic and holistic science, *Infection and Immunity*, 79(4), 1401-1404, doi:10.1128/IAI.01343-10

Fardilha, F. & Allen, J.B. (2019) Defining, assessing, and developing creativity in sport: a systematic narrative review, *International Review of Sport and Exercise Psychology*, 13(1), 104-127, doi: 10.1080/1750984X.2019.1616315

FIFA (n.d.) *Youth Football Manual*, Zurich, Switzerland:FIFA Education and Technical Development Department.

Finke, R. A., Ward, T. B., & Smith, S. M. (1992). *Creative cognition: Theory, research, and applications*. The MIT Press.

Fitts, P. M., & Posner, M. I. (1967) *Human performance*, Belmont, CA: Brooks/Cole.

Ford, P., Carling, c., Garces, M., Marques, M., Miguel, C., Farrant, A., Stenling, A., Moreno, J., Le Gall, F., Holmstrom, S., Salmela, J. & Williams, M. (2012) The developmental activities of elite soccer players aged under-16 years from Brazil, England, France, Ghana, Mexico, Portugal and Sweden, *Journal of Sport Sciences*, 30(15), 1653-1663, doi: 10.1080/02640414.2012.701762

Freud, S. (1910/1964) *Leonardo da Vinci and a memory of his childhood*. New York: Norton.

Furley, P., & Memmert, D. (2015, February). Creativity and working memory capacity in sports: Working memory capacity is not a limiting factor in creative decision making amongst skilled performers. *Frontiers in Psychology*, 6, 1–7

Furley, P., & Memmert, D. (2018). Can creative role models prime creativity in soccer players?, *Psychology of Sport and Exercise*, 37, 1–9. doi:10.1016/j.psychsport.2018.03.007

Furley, P., Memmert, D., & Heller, C. (2010). The dark side of visual awareness in sport: Inattentional blindness in a real-world basketball task. *Attention, Perception & Psychophysics*, 72(5), 1327–1337. doi:10.3758/APP.72.5.1327

Gagné, F. (1985). Giftedness and talent: Reexamining a reexamination of the definitions. *Gifted Child Quarterly*, 29, 103–112.

Gagné, F. (2005) Transforming gifts into talents: the DMGT as a developmental theory, *High Ability Studies*, 15(2), 119-147, doi: 10.1080/1359813042000314682

Gagné, F. (2009) Building gifts into talents: Detailed overview of the DMGT 2.0. In B. MacFarlane, & T. Stambaugh, (Eds.), *Leading change in gifted education: The festschrift of Dr. Joyce VanTassel-Baska* (pp.61-80) Waco, TX: Prufrock Press.

Gagné, F. (2013) The DMGT: Changes Within, Beneath, and Beyond, *Talent Development & Excellence*, 5(1), 5-19

Gale, D. (1955) The law of supply and demand, *Mathematica Scandinavica*, 3(1), 155-169

Galeano, E. (1998) *Football in Sun and Shadow: An Emotional History of World Cup Football*, Fourth Estate.

Galton, F. (1869) *Hereditary Genius*, London:Macmillan

Gardner, H. (1993a) *Multiple Intelligences*, Basic Books

Gardner, H. (1993b). *Creating minds: An anatomy of creativity seen through the lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi*. Basic Books.

Gee, S. (2009) Mediating Sport, Myth, and Masculinity: The National Hockey League's "Inside the Warrior" Advertising Campaign, *Sociology of Sport Journal*, 26(4), 578-598, doi:10.1123/ssj.26.4.578

Gehlert, S., Murray, A., Sohmer, D., McClintock, M., Conzen, S. & Olopade, O. (2013) The Importance of Transdisciplinary Collaborations for Understanding and Resolving Health Disparities, *Social Work in Public Health,* 25(3-4), 408-422, doi:10.1080/19371910903241124

Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston: Houghton Mifflin.

Giulianotti, R. & Gerrard, M. (2001) Evil Genie or Pure Genius: The (im)moral public career of Paul 'Gazza' Gascoigne. In Andrews, D. & Jackson, S. (Eds.) *Sport Stars: the cultural politics of sporting celebrity* (pp.124-137) London: Routledge

Giulianotti, R. (1999) *Football: A Sociology of the Global Game,* Cambridge:Polity Press.

Giulianotti, R (2012) Football. In Ritzer, G. (Ed.) *The Wiley-Blackwell Encyclopedia of Globalization* (pp.1-2), Wiley-Blackwell

Glăveanu, V.P. (2010a) Paradigms in the study of creativity: Introducing the perspective of cultural psychology, *New Ideas in Psychology,* 28(1), 79-93, doi: 10.1016/j.newideapsych.2009.07.007

Glăveanu, V.P. (2010b) Creativity in Context: The Ecology of Creativity Evaluations and Practices in an Artistic Craft, *Psychological Studies*, 55(4), 339–350, doi:10.1007/s12646-010-0056-8

Glăveanu, V.P. (2012) *Creativity and culture: towards a cultural psychology of creativity in folk art.* PhD thesis, The London School of Economics and Political Science

Glăveanu, V.P. (2014) *Distributed Creativity Thinking Outside the Box of the Creative Individual,* Springer

Glăveanu, V.P., Tanggaard, L., & Wegener, C. (2016) *Creativity: a new vocabulary,* Palgrave Macmillan

Glăveanu, V.P. (2018) Educating which creativity?, *Thinking Skills and Creativity,* 27, 25-32, doi: 10.1016/j.tsc.2017.11.006

Glăveanu, V.P., Hanson, M., Baer, J., Barbot, B.,Clapp, E.P., Corazza, G., Hennessey, B., Kaufman, J.C., Lebuda, I., Lubart, T., Montuori, A., Ness, I, Plucker, J., Reiter-Palmon, R., Sierra, Z., Simonton, D.K., Neves-Pereira, M., & Sternberg, R. (2018) Advancing Creativity Theory and Research: A Socio-cultural Manifesto, *Journal of Creative Behavior,* 54(3), 741-745, 10.1002/jocb.395

Glăveanu, V.P. & Kaufman, J. (2019) Creativity: a historical perspective. In In Kaufman, J. & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity* (pp.9-26) Cambridge: Cambridge University Press

Gledhill, A., Harwood, C. & Forsdyke, D. (2017) Psychosocial factors associated with talent development in football: A systematic review, *Psychology of Sport and Exercise*, 31, 93-112, doi:10.1016/j.psychsport.2017.04.002

Gonçalves, F. (2019) *A Crescente Importância da Formação de Jogadores no Futebol [The increasing importance of player development in football]*, Faculdade de Desporto da Universidade do Porto.

Greco, P., Memmert, D., & Morales, J. C. P. (2010). The effect of deliberate play on tactical performance in Basketball. *Perceptual and Motor Skills*, 110(3), 849–856. doi:10.2466/pms.110.3.849-856

Gruber, H. E., & Barrett, P. H. (1974). *Darwin on man: A psychological study of scientific creativity.* E. P. Dutton.

Gruber, H. & Wallace, D. (1999) The Case Study Method and Evolving Systems Approach for Understanding Unique Creative People at Work. In Sternberg, R.J. (Ed.) *Handbook of Creativity* (pp.93-115) Cambridge: Cambridge University Press

Guilford ,J. P.(1950) Creativity, *American Psychologist*, 5 ,444–454

Guilford, J. P. (1956). The structure of intellect. P*sychological Bulletin, 53*(4), 267–293. doi:10.1037/h0040755

Guilford, J. P. (1962). Factors that aid and hinder creativity, *Teachers College Record, 63*, 380–392.

Guilford, J. P. (1967). *The nature of human intelligence*. New York: McGraw-Hill.

Hammersley, M. (2013) *The Myth of Research-Based Policy and Practice*, London:Sage

Hampson, N. (1976) Subjectivity and Objectivity in History, *Journal of the British Society for Phenomenology*, 7(3), 184-188, doi:10.1080/00071773.1976.11006467

Harris, H. (1997) *Ruud Gullit: Portrait of a Genius (2nd ed.)*, Harper Collins Publishers

Harrison, C. M. (2016, February). Bebop on the Hockey Pitch: Cross-disciplinary creativity and skills transfer. *Frontiers in Psychology*, 7, 1–5. doi:10.3389/fpsyg.2016.00123

Harwood, C., Drew, A., & Knight, C. (2010) Parental stressors in professional youth football academies: a qualitative investigation of specialising stage parents, *Qualitative Research in Sport and Exercise*, 2(1), 39-55, doi:10.1080/19398440903510152

Helfand, M., Kaufman, J. & Beghetto, R. (2016) The Four-C Model of Creativity: Culture and Context. In Glăveanu, V.P. (Ed.) *The Palgrave Handbook of Creativity and Culture Research* (pp.15-36), Palgrave Macmillan

Helsen, W., Van Winckel, J. & Williams, A.M. (2005) The relative age effect in youth soccer across Europe, *Journal of Sport Sciences*, 23, 629-636, doi:10.1080/02640410400021310

Hendry, D. T., Williams, A. M., & Hodges, N. J. (2018). Coach ratings of skills and their relations to practice, play and successful transitions from youth-elite to adult-professional status in soccer. *Journal of Sports Sciences*, 36(17), 2009–2017

Hennessey, B. (2003) The Social Psychology of Creativity, *Scandinavian Journal of Educational Research*, 47(3), 253-271, doi:10.1080/00313830308601

Hennessey, B. & Amabile,T. (2010) Creativity, *Annual Review of Psychology,* 61, 569–598

Hennessey, B. (2019) Motivation and Creativity. In Kaufman, J., & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity, 2nd ed.* (pp. 374-395) Cambridge University Press.

Henrich, J., Hein, S. & Norenzayan, A. (2010) Most people are not WEIRD, *Nature*, 466, 29

Henriksen, K., Stambulova, N. & Roessler, K. (2010) Holistic approach to talent development environments: a successful sailing milieu, *Psychology of Sport and Exercise*, 11(3), 212-222, doi:10.1016/j.psychsport.2009.10.005

Henriksen, K. Larsen, C. & Christensen, M.K. (2014) Looking at success from its opposite pole: the case of a talent development golf environment in Denmark, *International Journal of Sport and Exercise Psychology,* 12(2), 134-149, doi:10.1080/1612197X.2013.853473

Henriksen, K. & Stambulova, N. (2017) Creating optimal environments for talent development: a holistic ecological approach. In Baker, J., Cobley, S., Schorer, J., & Wattie, N. (Eds.) *Routledge Handbook of Talent Identification and Development in Sport* (pp.271-284) Routledge

Hewson, C. & Stewart, D. W. (2016). Internet Research Methods. In Brandimarte, P., Davidian, M., Everitt, B., Molenberghs, G., Piegorsch, W. & Ruggeri, F. (Eds.) *Wiley StatsRef: Statistics Reference Online*, (pp.1-6) Wiley, doi:10.1002/9781118445112.stat06720.pub2

Higgins, J. (2018) Why Roger Federer is a GOAT: an account of sporting genius, *Journal of the Philosophy of Sport*, 45(3), 296-317, doi: 10.1080/00948705.2018.1520126

Hodge, K. & Sharp, L. (2016) Case studies. In Smith, B. & Sparkes, A.C. (Eds.) *Routledge Handbook of Qualitative Research in Sport and Exercise* (pp. 62-74) Routledge.

Holt, R. (1986) Working class football and the city: the problem of continuity, *The International Journal of the History of Sport*, 3(1), 5-17, doi:10.1080/02649378608713586

Holt, N. (2002) A comparison of the soccer talent development systems in England and Canada, *European Physical Education Review,* 8(3), 270-285

Holt, N., Tamminen, K., Black, D., Mandigo, J., & Fox, K. (2009) Youth Sport Parenting Styles and Practices, *Journal of Sport and Exercise Psychology,* 31(1), 37-59, doi: 10.1123/jsep.31.1.37

Hopsicker, P. (2011). In search of the 'sporting genius': Exploring the benchmarks to creative behavior in sporting activity. *Journal of the Philosophy of Sport*, 38(1), 113–127. doi:10.1080/00948705.2011.9714553

Horak, R. (2017) . In Giulianotti, R. & Williams, J. (Eds.) *Games Without Frontiers: Football, Identity, and Modernity* (pp.47-72) Routledge.

Hornig, M., Aust, F. & Güllich, A. (2014) Practice and play in the development of German top-level professional football players, *European Journal of Sport Science*, 16(1), 96-105, doi:10.1080/17461391.2014.982204

Howard-Jones, P., Taylorm J. & Sutton, L. (2002) The effect of play on the creativity of young children during subsequent activity, *Early Child Development and Care,* 172(4), 323-328, doi:10.1080/03004430212722

Hristovski, R., Davids, K., Araújo, D., & Passos, P. (2011). Constraints-induced emergence of functional novelty in complex neurobiological systems: A basis for creativity in sport. *Psychology and Life Sciences*, 15(2), 175–206.

Hristovski, R., Davids, K., Passos, P., & Araújo, D. (2012). Sport performance as a domain of creative problem solving for self-organizing performer-environment

systems. *The Open Sports Sciences Journal*, 5(1), 26–35. doi:10.2174/1875399X01205010026

Hughson, J., Moore, K., Spaaij, R. & Maguire, J. (2016) *Routledge Handbook of Football Studies*, Oxon:Routledge

Hunter, S., Bedell, K., & Mumford, M. (2007) Climate for creativity: a quantitative review, *Creativity Research Journal*, 19(1), 69-90, doi:10.1080/10400410709336883

Hüttermann, S., Nerb, J., & Memmert, D. (2018). The role of regulatory focus and expectation on creative decision making. *Human Movement Science*, 62, 169–175. doi:10.1016/j.humov.2018.10.006

International Council for Coaching Excellence (ICCE), Association of Summer Olympic International Federations (ASOIF), & Leeds Metropolitan University (LMU) (2013) *International sport coaching framework version 1.2*, Champaign, IL:Human Kinetics.

Igorov, M., Predoiu, R., Predoiu, A., & Igorov, A. (2016). Creativity, resistance to mental fatigue and coping strategies in junior women handball players. *5th international congress of physical education, sports and kinetotherapy,* Bucharest, 2015.

Ilundáin-Agurruza, J. (2017). Muscular imaginings—A phenomenological and enactive model for imagination. *Sport, Ethics and Philosophy,* 11(1), 92–108, doi:10.1080/17511321.2017.1294197

Impe, K, (2000) People for Sale: the need for a multidisciplinary approach towards human trafficking, *International Migration,* 38(3), 113-191, doi:10.1111/1468-2435.00117

Jensen, J.V. & Clementsen, P.S. (2020) Ecology and culture in talent development – a four-step intervention towards cultural leadership in key stakeholders in a Danish soccer academy. In Dixon, J, Barker, J., Thelwell, R., & Mitchell, I. (Eds.) *The Psychology of Soccer (pp.155-171), Routledge*

Joas, H. (1996) *The Creativity of Action,* Polity Press.

Jowett, S. (2017) Coaching effectiveness: the coach-athlete relationship at its heart, *Current opinion in Psychology,* 16, 154-158, doi:10.1016/j.copsyc.2017.05.006

Kampylis, P. & Valtanen, J. (2010) Redefining creativity – analyzing definitions, collocations, and consequences, *Journal of Creative Behavior,* 44(3), 191-214, doi:10.1002/j.2162-6057.2010.tb01333.x

Karwowski, M., Lebuda, I. & Beghetto, R. (2019) Creative Self-Beliefs. In Kaufman, J., & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity, 2nd ed.* (pp.396-417) Cambridge:Cambridge University Press

Kasof, J. (1995) Explaining creativity: the attributional perspective, *Creativity Research Journal,* 8(4), 311-366, doi:10.1207/s15326934crj0804_1

Kaufman, J., & Sternberg, R. (2007). Creativity. *Change: The Magazine of Higher Learning*, 39(4), 55–60.

Kaufman, J. & Beghetto, R. (2009) Beyond big and little: the four-c model of creativity, *Review of general psychology,* 13(1), 1-12, doi:10.1037/a0013688

Kearney, R. (1988). *The wake of imagination: Ideas of creativity in Western culture.* London: Hutchinson.

Kempe, M., & Memmert, D. (2018). "Good, better, creative": The influence of creativity on goal scoring in elite soccer. *Journal of Sports Sciences,* 36(21), 2419–2423. doi:10.1080/02640414.2018.1459153

Kim, K. H. (2011). The creativity crisis: The decrease in creative thinking scores on the torrance tests of creative thinking. *Creativity Research Journal*, 23(4), 285–295. doi:10.1080/10400419.2011.627805

King, A., Stokols, D., Talen, E., Brassington, G. & Killingsworth, R. (2002) Theoretical approaches to the promotion of physical activity: forging a transdisciplinary paradigm, *Americal Journal of Preventive Medicine,* 23(2-1), 15-25, doi:10.1016/S0749-3797(02)00470-1

Klein, J.T. (2013) The Transdisciplinary Moment(um), *Integral Review,* 9(2), 189-199

Kloos, H. & Zein, Z. (2019) *The Ecology of Health and Disease in Ethiopia*, New York: Routledge

Knight, C. & Newport, R. (2020) The Role of Parents in Developing Elite Soccer Players. In Dixon, J, Barker, J., Thelwell, R., & Mitchell, I. (Eds.) *The Psychology of Soccer (pp.121-132), Routledge*

Knight, C. J., Dorsch, T. E., Osai, K. V., Haderlie, K. L., & Sellars, P. A. (2016). Influences on parental involvement in youth sport, *Sport, Exercise, and Performance Psychology, 5*(2), 161–178, doi:10.1037/spy0000053

Knight, C., Berrow, S., & Harwood, C. (2017) Parenting in sport, *Current Opinion in Psychology*, 16, 93-97, doi:10.1016/j.copsyc.2017.03.011

Ko, C. & Chaudhry, S. (2002) The need for a multidisciplinary approach to cancer care, *Journal of Surgical Research,* 105(1), 53-57, doi:10.1006/jsre.2002.6449

Kőváry, Z. (2011) Psychobiography as a method, the revival of studying lives: new perspectives in personality and creativity research, *Europe's Journal of Psychology*, 7(4), 739-777, doi:10.5964/ejop.v7i4.162

Krampen, G., Freilinger, J., & Willems, L. (1996). *Kreativitätstest für Vorschul- und Schulkinder. Version für die psychologische Anwendungspraxis (KVS-P). [Creativity test for preschool and school children (KVSP): Version for preschool and school children]*. Göttingen: Hogrefe.

Krein, K., & Ilundáin-Agurruza, J. (2017). High-level enactive and embodied cognition in expert sport performance. *Sport, Ethics and Philosophy,* 11(3), 370–384. doi:10.1080/17511321.2017.1334004

Kuper, S. (2020 October 17) Arsène Wenger on leadership and life after Arsenal, *Financial Times*, https://www.ft.com/content/78f21f12-afee-4a4d-bff9-ce232fa4976e

Kurtzberg, T.R. (2005) Feeling creative, being creative: an empirical study of diversity and creativity in teams, *Creativity Research Journal,* 17(1), 51-65, doi:10.1207/s15326934crj1701_5

Lacerda, T., & Mumford, S. (2012). The genius in art and in sport: A contribution to the investigation of aesthetics of sport. *Journal of the Philosophy of Sport*, 37(2), 182–193. doi:10.1080/00948705.2010.9714775

Lago-Peñas, C., Lago-Peñas, S., & Lago, I. (2019) Player Migration and Soccer Performance, *Frontiers in Psychology*, 10(616), 1-7, doi:10.3389/fpsyg.2019.00616

Lanfranchi, P., Holt, N. & Mangan, J.A. (Eds.) (2013) *European Heroes: Myth, Identity, Sport*, Oxon:Routledge

Lang, M. & Light, R. (2010) Interpreting and implementing the Long Term Athlete Development model: English Swimming Coaches' Views on the (Swimming) LTAD in Practice, *International Journal of Sports Science & Coaching*, 5(3), 389-402, doi:10.1260%2F1747-9541.5.3.389

Lansdown, G. (2019) Every child's right to be heard: a resource guide on the UN Committee on the Rights of Children general comment no.12, *Save the Children UK*, https://www.unicef.org/files/Every_Childs_Right_to_be_Heard.pdf

Larkin, P. & Reeves, M.J. (2018) Junior-elite football: time to re-position talent identification?, *Soccer & Society,* 19(8), 1183-1192, doi:10.1080/14660970.2018.1432389

Larsen, C. Alfermann, D. & Christensen, M.K. (2012) Psychosocial skills in a youth soccer academy: a holistic ecological perspective, *Sport Science Review,* 21(3-4), 51-74.

Larsen, C. H., Alfermann, D., Henriksen, K., & Christensen, M. K. (2013). Successful talent development in soccer: The characteristics of the environment, *Sport, Exercise, and Performance Psychology*, 2(3), 190–206.doi:10.1037/a0031958

Lave, J. & Wenger, E. (1991) *Situated Learning: Legitimate peripheral participation,* Cambridge University Press.

Lea, G. (2019 October 23) "He's changed the way we see football" – Rio Ferdinand hails "genius" Pep Guardiola, *FourFourTwo,* https://www.fourfourtwo.com/news/pep-guardiola-manchester-city-changed-way-we-see-football-rio-ferdinand-hails-genius

Lebuda, I. & Glăveanu, V.P. (Eds.) (2019) *The Palgrave Handbook of Social Creativity Research,* Palgrave Macmillan

Lechner, F. (2007) Imagined communities in the global game: Soccer and the development of Dutch national identity, *Global Networks*, 7(2), 215-229, doi:10.1111/j.1471-0374.2007.00166.x

Leclerc, N. (2012) L'espace ludique, un espace à part [The playing area, a space apart], *Geographie et cultures,* 82, 9-24, doi:10.4000/gc.1292

Leso, G., Dias, G., Ferreira, J., Gama, J., & Couceiro, M. S. (2017). Perception of creativity and game intelligence in soccer. Creativity Research Journal, 29(2), 182–187. doi:10.1080/10400419.2017.1302779

Levin, C. (2008) *Creativity in the school context,* Lund University Publications

Liga Portugal (2020) Plano B: reflexão sobre as equipas B [Plan B: reflecting about B teams], *Liga Portugal*, https://www.ligaportugal.pt/pt/epocas/20202021/publicacoes/plano-b-reflexao-sobre-as-equipas-b/

Lincoln, Y.S. & Guba, E.G. (1985) Establishing trustworthiness, *Naturalistic Inquiry,* 289-331

Lobo, L.F. (2002) *Os magos do futebol [The wizards of football],* Bertrand

Luhtanen, P., Vänttinen, Häyrinen, M., & Brown, E.W. (2002) A game performance analysis by age and gender in national level Finnish youth soccer players. In Murphy, A., Reilly, T., & Spinks, W. (Eds.) *Science and Football IV,* London:Routledge.

Maass, M. & Equihua, M. (2015) Earth Stewardship, Socioecosystems, the Need for a Transdisciplinary Approach and the Role of the International Long Term Ecological Research Network (ILTER). In Rozzi, R., Chapin III, F., Calicott, J., Pickett, S.T.A., Power, M.E., Armesto, J., & May Jr., R. (Eds.) *Earth Stewardship* (p.217-233) Springer

MacDonald, S. & Allen, J.B. (2019) Coach-created talent development motivational climate in canoe slalom in the United Kingdom, *International Sport Coaching Journal,* 6(1), 74-87, doi:10.1123/iscj.2017-0091

Maciel, J. (2011) *Não deixes matar o bom futebol e quem o joga [Don't let them kill good football and those who play it],* Porto:Chiado Editora

MacQuarrie, C. (2009) Holistic Designs. In Mills, A., Durepos, G., & Wiebe, E. (Eds.) *Encyclopedia of Case Study Research* (pp.441-443) Sage Publications

Mageau, G. & Vallerand, R. (2003) The coach-athlete relationship: a motivational model, *Journal of Sports Sciences,* 21(11), 883-904, doi:10.1080/0264041031000140374

Maldonato, M. & Pietrobon, R. (Eds.) (2009) *Research on Scientific Research: a transdisciplinary study,* Sussex Academic Press

Markus, H. R., & Hamedani, M. G. (2007) Sociocultural psychology: The dynamic interdependence among self systems and social systems. In S. Kitayama & D. Cohen (Eds.) *Handbook of cultural psychology* (p. 3–39) The Guilford Press

Martin, J., & Cox, D. (2016). Positioning Steve Nash: A theory-driven, social psychological, and biographical case study of creativity in sport. The Sport Psychologist, 30(4), 388–398. doi:10.1123/tsp.2016-0002

Martindale, C. (1999) Biological bases of creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (p. 137–152). Cambridge University Press.

Martindale, R., Collins, D. & Abraham, A. (2007) Effective Talent Development: the Elite Coach Perspective in UK Sport, *Journal of Applied Sport Psychology,* 19(2), 187-206. doi:10.1080/10413200701188944

Martindale, R., Collins, D. & Daubney, J. (2005) Talent development: a guide for practice and research within sport, *Quest,* 57(4), 353-375, doi:10.1080/00336297.2005.10491862

Max-Neef, M. (2005) Foundations of transdisciplinarity, *Ecological Economics*, 53(1), 5-16, doi:10.1016/j.ecolecon.2005.01.014

Mayer, J. D. & Salovey, P. (1997). What is Emotional Intelligence? In Salovey, P. and Sluyter, D. J. (Eds.) *Emotional Development and Emotional Intelligence: Educational Implications* (pp. 3-31). New York: Basic Books.

McAuley, A., Hughes, D., Tsaprouni, L., Varley, I., Suraci, B., Roos, T., Herbert, A. & Kelly, A. (2020) Genetic association research in football: a systematic review, *European Journal of Sport Science,* doi:10.1080/17461391.2020.1776401

McCall, A., Davison, M., Carling, C., Buckthorpe, M., Coutts, A., & Dupont, G. (2016) Can off-field 'brains' provide a competitive advantage in professional football?, *British Journal of Sports Medicine*, 50(12), 710-712, doi: 10.1136/bjsports-2015-095807

McGillivray, D., & McIntosh, A. (2006). Football is my life: Theorizing social practice in the Scottish Professional Football Field. *Sport in Society*, 9, 371- 387, doi:10.1080/17430430600673381

McGregor, S. (2018) Philosophical Underpinnings of the Transdisciplinary Research Methodology, *Transdisciplinary Journal of Engineering & Science,* 9, 182-198, doi:10.22545/2018/00109

Mednick, S. (1962). The associative basis of the creative process. *Psychological Review*, 69(3), 220–232.

Meier, J., Topka, M.S. & Hänggi, J. (2016) Differences in cortical representation and structural connectivity of hands and feet between professional handball players and ballet dancers, *Neural Plasticity,* 1-17, doi:10.1155/2016/6817397

Meier, N., Wegener, C., & Maslo, E. (Eds.) (2018) *Cultivating Creativity in Methodology and Research: In praise of detours*, Palgrave Macmillan

Memmert, D., & Roth, K. (2003). Individualtaktische Leistungs- diagnostik im Sportspiel [Diagnostics of individual tactical performance in sports games]. *Spektrum Der Sportwissenschaft [Spectrum of Sport Science]*, 15, 44–70.

Memmert, D. (2006). Developing creative thinking in a gifted sport enrichment program and the crucial role of attention processes. *High Ability Studies*, 17(1), 101–115. doi:10.1080/13598130600947176

Memmert, D. (2007). Can creativity be improved by an attention-broadening training program? An exploratory study focusing on team sports. *Creativity Research Journal*, 19(2-3), 281–291. doi:10.1080/10400410701397420

Memmert, D., & Furley, P. (2007). “I spy with my little eye!”: Breadth of attention, inattentional blindness, and tactical decision making in team sports. *Journal of Sport & Exercise Psychology*, 29(3), 365–381. doi:10.1123/jsep.29.3.365

Memmert, D., & Roth, K. (2007). The effects of non-specific and specific concepts on tactical creativity in team ball sports. *Journal of Sports Sciences*, 25(12), 1423–1432. doi:10.1080/02640410601129755

Memmert, D., & Perl, J. (2009a). Game creativity analysis using neural networks. Journal of Sports Sciences, 27(2), 139–149. doi:10.1080/02640410802442007

Memmert, D., & Perl, J. (2009b). Analysis and simulation of creativity learning by means of artificial neural networks. *Human Movement Science*, 28(2), 263–282, doi:10.1016/j.humov.2008.07.006

Memmert, D. (2010). Testing of tactical performance in youth elite soccer. J*ournal of Sports Science and Medicine*, 9(2), 199–205.

Memmert, D., Baker, J., & Bertsch, C. (2010). Play and practice in the development of sport-specific creativity in team ball sports. *High Ability Studies*, 21(1), 3–18. doi:10.1080/13598139.2010.488083

Memmert, D. (2011). Creativity, expertise, and attention: Exploring their development and their relationships. *Journal of Sports Sciences*, 29(1), 93–102, doi:10.1080/02640414.2010.528014

Memmert, D., Hüttermann, S., & Orliczek, J. (2013). Decide like Lionel Messi! The impact of regulatory focus on divergent thinking in sports. *Journal of Applied Social Psychology*, 43(10), 2163–2167.doi:10.1111/jasp.12159

Memmert, D. (2015). *Teaching tactical creativity in sport: Research and practice. Routledge studies in physical education and youth sport*. Abingdon: Routledge.

Memmert, D. (2017). Tactical creativity in sport. In J. C. Kaufman, V. P. Glăveanu, & J. Baer (Eds.), *The Cambridge handbook of creativity across domains* (pp. 479–491). Cambridge: Cambridge University Press.

Memmert, D. & Raabe, D. (2018) *Data Analytics in Football: positional data collection, modelling and analysis,* Routledge

Miettinen, R. (2006) The sources of novelty: a cultural and systemic view of distributed creativity, 15(2), 173-181, doi:10.1111/j.1467-8691.2006.00381.x

Milby, S. P. (2006) *"Stylin'! Samba joy versus structural precision: the soccer case studies of Brazil and Germany."* PhD thesis, Ohio State University.

Mills, A., Butt, J., Maynard, I., & Harwood, C. (2014) Examining the development environments of elite English football academies: the players' perspective, *International Journal of Sports Science & Coaching,* 9(6), 1457-1472, doi:10.1260/1747-9541.9.6.1457

Montuori, A. & Purser, R. (1999) *Social Creativity,* Cresskill, NJ:Hampton Press

Montuori, A. (2005) Gregory Bateson and the promise of transdisciplinarity, *Cybernetics & Human Knowing,* 12(1-2), 147-158.

Montuori, A. (2013) Complexity and transdisciplinarity: reflections on theory and practice, *World Futures,* 69(4-6), doi:10.1080/02604027.2013.803349

Montuori, A. (2014) Transdisciplinary Reflections on Glăveanu's "Crisis" of the Psychology of Creativity, *Creativity – Theories – Research – Applications,* 1(2), 246-255, doi:10.15290/ctra.2014.01.02.12

Montuori, A., & Donnelly, G. (2016). The creativity of culture and the culture of creativity research: the promise of Integrative Transdisciplinarity. In Glăveanu, V.P. (Ed.), *The Palgrave handbook of creativity and culture research* (pp. 743–765) London: Palgrave Macmillan UK

Montuori, A. (2019) Creating Social Creativity: Integrative Transdisciplinarity and the Epistemology of Complexity. In Lebuda, I., & Glăveanu, V. (Eds.) *The Palgrave Handbook of Social Creativity Research* (pp. 407-430) Palgrave Macmillan.

Moore, R. (1966) *Niels Bohr: the man, his science and the world they changed,* New York:Knopf

Moraru, A., Memmert, D., & van der Kamp, J. (2016). Motor creativity: The roles of attention breadth and working memory in a divergent doing task. *Journal of Cognitive Psychology,* 28(7), 856–867. doi:10.1080/20445911.2016.1201084

Morgan, D., Ataie, J., Carder, P., & Hoffman, K. (2013) Introducing dyadic interviews as a method for collecting qualitative data, *Qualitative Health Research,* 23(9), 1276-1284, doi:10.1177%2F1049732313501889

Morin, E. (2002) *Ciência com consciência [Science with conscientiousness] 13th ed.*, Bertrand Brasil.

Morin, E. (2008) *On complexity,* Hampton Press

Morrow, S. & Howieson, B. (2014) The new business of football: a study of current and aspirant football club managers, *Journal of Sport Management,* 28(5), 515-528, doi:10.1123/jsm.2013-0134

Mumford, M., Martin, R.W., Elliott, S., & McIntosh, T. (2019) Leading for Creativity: A tripartite model. In In Kaufman, J., & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity, 2nd ed.* (pp. 546-566) Cambridge University Press.

Mumford, M., Hester, K., & Robledo, I. (2012) Creativity in Organizations: Importance and Approaches. In Mumford, M. (Ed.) *Handbook of Organizational Creativity* (pp.3-16) Academic Press, doi:10.1016/B978-0-12-374714-3.00001-X

Nelson, L., Potrac, P., & Groom, R. (2014) The place of theory. In Nelson, L., Groom, R. & Potrac, P. (Eds.) *Research Methods in Sports Coaching* (pp.76-85) Routledge

Nicolescu, B. & Ertas, A. (2013) *Transdisciplinary, Theory & Practice,* The Academy of Transdisciplinary Learning & Advanced Studies

Nicolescu, B. (Ed.) (2006) *Transdisciplinarity – Theory and Practice,* Cresskill, NJ:Hampton Press

Nicolescu, B. (2010). Methodology of transdisciplinarity: Levels of reality, logic of the included middle and complexity, *Transdisciplinary Journal of Engineering & Science*, 1, 17-32.

Nicolescu, B. (2014) Methodology of Transdisciplinarity, *World Futures*, 70(3-4), 186-199, doi:10.1080/02604027.2014.934631

Norbäck, P-J., Olsson, M., & Person, L., (2018) *Talent Development and Labour Market Integration: The Case of EU Football, https://ssrn.com/abstract=3122364*

North, J. (2017) *Sport Coaching Research and Practice: Ontology, Interdisciplinarity, and Critical Realism,* Oxon:Routledge.

O'Brien, J., Ginesta, X. & Juncà, A. (2020) Culture, tradition and change in elite level football: the English Premier League and La Liga. In O'Brien, J., Holden, R., & Ginesta, X. (Eds.) *Sport, Globalisation and Identity: New Perspectives on Regions and Nations,* (pp.165-180), Routledge, doi:10.4324/9781003007104

Observatório do Futebol (2019) *As finanças dos 3 grandes [The finances of the three greats]*, Universidade Europeia, https://www.europeia.pt/content/files/as_finanas_dos_3_grandes.pdf

Oh, J., Joung, K., Kim, H.-K., Choi, H., Kim, N., & Sung, J. (2010). Coaches' views on the development of creativity of Korean football. *Research Consortium Conference, Indianapolis,* March 2010.

Orth, D., van der Kamp, G. J. P., Memmert, D., & Savelsbergh, G. J. P. (2017). Creative motor actions as emerging from movement variability. *Frontiers in Psychology*, 8, 1–8.

Paek, B., Martyn, J., Oja, B., Kim, M. & Larkins, R. (2020) Searching for sport employee creativity: a mixed-methods exploration, *European Sport Management Quarterly,* 1-23, doi: 10.1080/16184742.2020.1804429

Pain, M. (2020 Jan 8) How to make your team more creative, *The FA Bootroom*, https://thebootroom.thefa.com/resources/coaching/how-to-make-your-team-more-creative

Patton, M.Q. (2002) *Qualitative research & evaluation methods (3rd ed.)*, Thousand Oaks: Sage Publications

Patton, M. Q., (2014) *Qualitative Research & Evaluation Methods Integrating Theory and Practice (Fourth Edition),* Sage Publications

Peeters, T., Mills, B., Pennings, E., & Sung, H. (2019) Manager migration, learning-by-hiring, and cultural distance in international soccer, *Global Strategy Journal*, 1-26, doi:10.1002/gsj.1354

Peters, M.A. (2010) Three forms of the knowledge economy: learning, creativity and openess, *Economics, Management, and Financial Markets,* 5(4), 63-92

Pickering, M. & Negus, K. (2004) Rethinking Creative Genius, *Popular Music*, 23(2), 198-203

Piggott, B., Müller, S., Chivers, P., Papaluca, C., & Hoyne, G. (2017) Is sports science answering the call for interdisciplinary research? A systematic review, *European Journal of Sport Science,* 19(3), 267-286, doi:10.1080/17461391.2018.1508506

Piggott, D. (2012) Coaches' experiences of formal coach education: a critical sociological investigation, *Sport, Education and Society,* 17(4), 535-554, doi:10.1080/13573322.2011.608949

Pohl, C. (2010). From Transdisciplinarity to Transdisciplinary Research. *Transdisciplinary Journal of Engineering & Science*, 1, 65-73. doi:10.22545/2010/0006

Pope, R. (2005) *Creativity: Theory, History, Practice,* Oxon:Routledge

Pordata (2021) Administrações Públicas: dívida bruta em % do PIB [Public Administrations: gross debt in GDP percentage], *Fundação Francisco Manuel dos Santos, https://www.pordata.pt/Portugal/Administra%c3%a7%c3%b5es+P%c3%bablicas+d%c3%advida+bruta+em+percentagem+do+PIB-2786*

Premier League (2011) *Elite Player Performance Plan,* London:Premier League

Rádio Renascença (2019 Oct 14) Domingos Soares Oliveira. “Não vejo entrave à renovação de contrato com Bruno Lage", *Rádio Renascença*, https://rr.sapo.pt/2019/10/24/benfica/domingos-soares-oliveira-nao-vejo-entrave-a-renovacao-de-contrato-com-bruno-lage/noticia/169310/

Ramires, L. (2019 February 12) Bernardo Silva: ‘O futebol vem muito da minha mãe que sempre foi aos jogos do Sporting’ [Football comes mainly from my mum who always went to see Sporting’s matches], *Sol,* https://sol.sapo.pt/artigo/646284/bernardo-silva-o-futebol-vem-muito-da-minha-mae-que-sempre-foi-aos-jogos-do-sporting

Rasmussen, L. J. T., & Østergaard, L. D. (2016). The creative soccer platform: New strategies for stimulating creativity in organized youth soccer practice. *Journal of Physical Education, Recreation & Dance*, 87(7), 9–19. doi:10.1080/07303084.2016.1202799

Rasmussen, L. J. T., Østergaard, L. D., & Glăveanu, V. P. (2019). Creativity as a developmental resource in sport training activities. *Sport, Education and Society,* 24, 491–506

Rasmussen, L.J.T., Glăveanu, V. P., & Østergaard, L. D. (2020a) Exploring the multifaceted role of creativity in an elite football context, *Qualitative Research in Sport, Exercise and Health,* 12(2), 256-271, doi:10.1080/2159676X.2019.1625809

Rasmussen, L.J.T., Glăveanu, V. P., & Østergaard, L. D. (2020b) “The principles are good, but they need to be integrated in the right way”: Experimenting with creativity in elite youth soccer, *Journal of Applied Sport Psychology,* doi.org/10.1080/10413200.2020.1778135

Record (2018 June 19) Bernardo Silva conta como Fernando Chalana ‘salvou’ a sua carreira [Bernardo Silva explains how Fernando Chalana ‘saved’ his career], *Record,* https://www.record.pt/internacional/paises/inglaterra/detalhe/bernardo-silva-conta-como-fernando-chalana-salvou-a-sua-carreira

Redlich, B. & Lattemann, C. (2019) A design thinking approach for talent management – can talent management benefit from design thinking? In Liu, Y. (Ed.) *Research Handbook of International Talent Management* (pp.94-106) Edward Elgar Publishing

Rees, T., Hardy, L., Güllich, A., Abernethy, B., Côté, J., Woodman, T., Montgomery, H., Laing, S., & Warr, C. (2016) The Great British Medalists Project: a review of current knowledge on the development of the World’s best talent, *Sports Medicine,* 46, 1041-1058, doi:10.1007/s40279-016-0476-2

Reeves, M.J., McRobert, A., Littlewood, M. & Roberts, S.J. (2018) A scoping review of the potential sociological predictors of talent in junior-elite football: 2000-2016, *Soccer & Society,* 19(8), 1085-1105, doi:10.1080/14660970.2018.1432386

Reilly, R. (2012) Participatory Case Study. In Mills, A., Durepos, G., & Wiebe, E. (Eds.) *Encyclopedia of Case Study Research* (pp.658-661) Sage Publications

Reilly, T., Williams, A. & Richardson, D. (2008) Talent identification and development in football. In Fisher, R. & Bailey, R. (Eds.) *Perspectives, The Multidisciplinary Series of Physical Education and Sport Science – Talent Identification and Development, The Search for Sporting Excellence* (pp.183–199) Berlin:ICSSPE

Reis, J. (2018) *La sustentabilidad del morfociclo patrón: La"Célula madre" de la periodización táctica [The sustainability of the pattern morphocycle: the “Mother cell” of tactical periodization]*, MCSports

Reiter-Palmon, R., de Vreede, T., & de Vreede, G. J. (2013). Leading creative interdisciplinary teams: Challenges and solutions. In Hemlin, S., Allwood, C., Martin, B & Mumford, M. (eds.), *Creativity and leadership in science, technology and innovation* (pp. 240–267). New York: Routledge.

Reiter-Palmon, R., Mitchell, K. & Royston, R. (2019) Improving Creativity in Organizational Settings. In In Kaufman, J., & Sternberg, R. (Eds.) *The Cambridge Handbook of Creativity, 2nd ed.* (pp.515.545) Cambridge University Press.

Relvas, H., Littlewood, M., Nesti, M., Gilbourne, D. & Richardson, D. (2010) Organizational Structures and Working Practices in Elite European Professional Football Clubs: Understanding the Relationship between Youth and Professional Domains, *European Sport Management Quarterly,* 10(2), 165-187, doi:10.1080/16184740903559891

Renshaw, I. & Chow, J-Y. (2018) A constraint-led approach to sport and physical education pedagogy, *Physical Education and Sport Pedagogy,* 24(2), 103-116, doi:10.1080/17408989.2018.1552676

Renshaw, I., Davids, K. & Savelsbergh, G. (Eds.) (2010) *Motor Learning in Practice: a constraints-led approach,* Oxon:Routledge

Renshaw, I., Davids, K., Newcombe, D., & Roberts, W. (2019) *The constraints-led approach: principles for sports coaching and practice design,* Routledge

Rhodes, M. (1961) An Analysis of Creativity, *The Phi Delta Kappan*, 42(7), 305-310

Richard, V., Abdulla, A. M., & Runco, M. A. (2017). Influence of skill level, experience, hours of training, and other sport participation on the creativity of elite athletes. *Journal of Genius and Eminence*, 2(1), 65–76. doi:10.18536/jge.2017.04.02.01.07

Richardson, J.T. (1999) The Concepts and Methods of Phenomenographic Research, *Review of Educational Research,* 69(1), 53-82, doi:10.3102%2F00346543069001053

Richardson, D., Gilbourne, D. & Littlewood, M. (2004) Developing support mechanisms for elite young players in a professional soccer academy: creative reflections in action research, *European Sport Management Quarterly*, 4(4), 195-214, doi:10.1080/16184740408737477

Riedl, L. & Cachay, K. (2002) *Bosman- Urteil und Nachwuchsförderung [Bosman ruling and talent development],* Schorndorf: Hofmann

Roca, A., Ford, P. R., & Memmert, D. (2018). Creative decision making and visual search behavior in skilled soccer players. *PLoS ONE*, 13(7), e0199381, doi:10.1371/journal.pone.0199381

Roco, M. (2004). *Creativitate şi inteligenţă emoţională [Creativity and emotional intelligence]*. Iaş: Editura Polirom.

Roderick, M. (2006) *The work of professional football: a labour of love?,* Routledge

Roderick, M., & Schumacher, J., (2017) ‘The Whole Week Comes Down to the Team Sheet’: A Footballer’s View of Insecure Work’, *Work, Employment and Society,* 31(1), 166–174, doi:10.1177/0950017016672792.

Roe, A. (1953). A psychological study of eminent psychologists and anthropologists, and a comparison with biological and physical scientists, *Psychological Monographs: General and Applied, 67*(2), 1–55, doi:10.1037/h0093638

Rohde, M. & Breuer, C. (2017) The market for football club investors: a review of theory and empirical evidence from professional football, *European Sport Management Quarterly,* 17(3), 265-289, doi:10.1080/16184742.2017.1279203

Rosenfield, P. (1992) The potential of transdisciplinary research for sustaining and extending linkages between the health and social sciences, *Social Science & Medicine,* 35(11), 1343-1357, doi:10.1016/0277-9536(92)90038-R

Roth, K., & Raab, M. (1998) Intentionale und inzidentelle Regelbildungsprozesse im Sportspiel [Intentional and Incidental Rule Formation Processes in Sports Play]. In J. Schiffer (Ed.) *BISp-Jahrbuch* (pp. 243-247). Cologne: BISp.

Runco, M. & Albert, R.S. (1990) *Theories of creativity,* Sage Publications

Runco, M. A., & Chand, I. (1994). Problem finding, evaluative thinking, and creativity. In M. A. Runco (Ed.), *Problem finding, problem solving, and creativity* (pp. 40–76). Norwood, NJ: Ablex.

Runco, M. A., & Albert, R. S. (2010) *Creativity research: A historical view.* In Kaufman, J.C. & Sternberg, R.J. (Eds.), *The Cambridge handbook of creativity* (p. 3–19). Cambridge University Press. Doi: 10.1017/CBO9780511763205.003

Runco, M. A. (2011) *Creativity testing: Manual for the Runco Creativity Assessment Battery*. Athens, GA:Creativity Testing Services

Runco, M. (2014). *Creativity: Theories and themes: Research, development, and practice (2nd ed.),* Amsterdam: Academic Press.

Runyan, W. M. (2005). How to Critically Evaluate Alternative Explanations of Life Events: The Case of Van Gogh's Ear. In W. T. Schultz (Ed.), *Handbook of psychobiography* (p. 96–103). Oxford University Press.

Russ, S.W. (2016) Pretend play: antecedent of adult creativity, *New Directions for Child and Adolescent Development,* 151, 21-32, doi:10.1002/cad.20154

Sadler-Smith, E. (2015) Wallas’ Fourt-Stage Model of the Creative Process: More Than Meets the Eye?, *Creativity Research Journal,* 27(4), 342-352

Santaliestra-Pasías, A., Rey-López, J. & Moreno Aznar, L. (2013) Obesity and sedentarism in children and adolescents: what should be done?, *Nutricion Hospitalaria,* 28(5), 99-104

Santos, S. D. L., Memmert, D., Sampaio, J., & Leite, N. (2016). The spawns of creative behavior in team sports: A creativity developmental framework. *Frontiers in Psychology*, 7, 1–14. doi:10.3389/fpsyg.2016.01282

Santos, S., Jiménez, S., Sampaio, J., & Leite, N. (2017). Effects of the Skills4Genius sports-based training program in creative behavior. *PLoS ONE*, 12(2), 1–7. doi:10.1371/journal. pone.0172520

Santos, S., Coutinho, D., Gonçalves, B., Schöllhorn, W., Sampaio, J., & Leite, N. (2018). Differential learning as a key training approach to improve creative and tactical behavior in soccer. *Research Quarterly for Exercise and Sport*, 89(1), 11–24.

Sarmento, H., Anguera, M.T., Pereira, A. & Araújo, D. (2018) Talent Identification and Development in Male Football: a systematic review, *Sports Medicine,* 48, 907-931

Sawyer, R. K., & DeZutter, S. (2009). Distributed creativity: How collective creations emerge from collaboration. *Psychology of Aesthetics, Creativity, and the Arts, 3*(2), 81–92, doi:10.1037/a0013282

Sawyer, R.K. (2012) Extending Sociocultural Theory to Group Creativity, *Vacations and Learning*, 5, 59-75

Sawyer, R.K. (2014) *Group Creativity: Music, Theather, Collaboration*, Routledge

Schary, D. & Cardinal, B. (2015) Interdisciplinary and Intradisciplinary Research and Teaching in Kinesiology: Continuing the Conversation, *Quest,* 67(2), 173-184, doi:10.1080/00336297.2015.1017586

Schöllhorn, W. I., Mayer-Kress, G., Newell, K. M., & Michelbrink, M. (2009). Time scales of adaptive behavior and motor learning in the presence of stochastic perturbations. *Human Movement Science*, 28(3), 319–333. doi:10.1016/j.humov.2008.10.005

Schorer, J., Wattie, N., Cobley, S. & Baker, J. (2017) Concluding, but definitely not conclusive, remarks on talent identification and development. In Baker, J., Cobley, S., Schorer, J., & Wattie, N. (Eds.) *Routledge Handbook of Talent Identification and Development in Sport* (pp.466-476) Routledge

Schultz, W. T. (2005).Introducing Psychobiography. In Schultz, W.T. (Ed.), *Handbook of psychobiography* (p. 3–18). Oxford University Press.

Schultz, W. T. (2014) The psychobiography of genius. In Simonton, D.K. (Ed.), *The Wiley handbook of genius* (p. 20–32). Wiley Blackwell, doi:10.1002/9781118367377.ch2

Schwandt, T. A., & Gates, E. F. (2018). Case study methodology. In Denzin, N.K. & Lincoln, Y.S. (Eds.), *The Sage handbook of qualitative research* (pp. 341-358). Thousand Oaks, CA: Sage.

Senge, P. M. (2010) Education for an Interdependent World: Developing Systems Citizens. In Hargreaves, A., Lieberman, A., Fullan, M. & Hopkins, D. (Eds.) *Second International Handbook of Educational Change* (pp.131-151) Springer

Shalley, C., Hitt, M.A., & Zhou, J., (Eds.) *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, Oxford:Oxford University Press

Shenton, A.K. (2004) Strategies for ensuring trustworthiness in qualitative research projects, *Education for Information*, 22(2), 63-75

Sieghartsleitner, R., Zuber, C., Zibung, M., & Conzelmann, A. (2019) Science or Coaches' Eye? - Both! Beneficial collaboration of multidimensional measurements and coach assessments for efficient talent selection in elite youth football, *Journal of Sport Sciences and Medicine*, 18(1), 32-43

Silva Costa, A. (1992) *Desporto e Análise Social [Sport and Social Analysis]*, Porto:Faculdade de Letras da Universidade do Porto

Silva, M. (2008) *O desenvolvimento do jogar segundo a periodização táctica [The development of a way of playing according to tactical periodisation]*, MCSports

Simonton, D. K. (1975) Sociocultural context of individual creativity: A transhistorical time-series analysis, *Journal of Personality and Social Psychology, 32*(6), 1119–1133, doi:10.1037/0022-3514.32.6.1119

Simonton, D. K. (1990). *Psychology, science, and history: An introduction to historiometry.* Yale University Press.

Simonton, D.K. (1992) The Social Context of Career Success and Course for 2,026 Scientists and Inventors, *Personality and Social Psychology Bulletin*, 18(4), 452-463, doi:10.1177%2F0146167292184009

Simonton, D.K. (2010) Creativity in Highly Eminent Individuals. In Kaufman, J.C. & Sternberg, R.J. (Eds.), *The Cambridge handbook of creativity* (p. 174-188). Cambridge University Press.

Simonton, D. K. (2011). Creativity and discovery as blind variation and selective retention: Multiple-variant definition and blind-sighted integration. *Psychology of Aesthetics, Creativity, and the Arts, 5*(3), 222–228, doi:10.1037/a0023144

Simonton, D. K. (2012). Taking the U.S. patent office criteria seriously: A quantitative three-criterion creativity definition and its implications. Creativity Research Journal, 24(2–3), 97–106. doi:10.1080/10400419.2012.676974

Simonton, D.K. (2013) What is a creative idea? Little-c versus Big-C creativity. In Thomas, K. & Chan, J. (Eds.) *Handbook of Research on Creativity* (pp.69-83) Edward Elgar Publishing

Simonton, D.K. (2015) On Praising Convergent Thinking: Creativity as Blind Variation and Selective Retention, *Creativity Research Journal,* 27(3), 262-270, doi:10.1080/10400419.2015.1063877

Simonton, D. K. (2017) The genetic side of giftedness: A nature-nurture definition and a fourfold talent typology. In Plucker, J., Rinn, A.N., & Makel, M. (Eds.),*From giftedness to gifted education: Reflecting theory in practice* (p. 335–352). Prufrock Press Inc.

Smith, N.L. & Green, B.C. (2020) Examining the factors influencing organizational creativity in professional sport organizations, *Sport Management Review,* 23(5), 992-1004, doi:10.1016/j.smr.2020.02.003

Smith, B. & Caddick, N. (2012) Qualitative methods in sport: a concise overview for guiding social scientific sport research, *Asia Pacific Journal of Sport and Social Science,* 1(1), 60-73, doi:10.1080/21640599.2012.701373

Smith, B., Sparkes, A. & Caddick, N. (2014) Judging qualitative research. In Nelson, L., Groom, R. & Potrac, P. (Eds.) *Research Methods in Sports Coaching* (pp.192-201) Routledge

Smith, B. & Sparkes, A. (2016) *Routledge Handbook of Qualitative Research in Sport and Exercise* (pp. 62-74) Routledge

Smith, R. (2017 April 26) Cybernetics, Cesarean Sections and Soccer's Most Magnificent Mind, *New York Times*, https://www.nytimes.com/2017/04/26/sports/soccer/cybernetics-cesarean-sections-and-soccers-most-magnificent-mind.html

Smith, R. (2020 Nov 13) Arsène Wenger and the Gift of Time, *New York Times*, https://www.nytimes.com/2020/11/13/sports/soccer/arsene-wenger-usmnt-uswnt.html

Smith, W. (2014). Fundamental movement skills and fundamental games skills are complementary pairs and should be taught in complementary ways at all stages of skill development. *Sport, Education and Society*, 21(3), 431–442, doi:10.1080/13573322.2014.927757

Sobrinho, A. (2019) Creative Culture Analysis: a way to understand how an environment is (or isn't) favorable to creative ideas. In Lebuda, I., & Glăveanu, V. (Eds.) *The Palgrave Handbook of Social Creativity Research* (pp. 373-390) Palgrave Macmillan.

Sparkes, A. & Smith, B. (2009) Judging the quality of qualitative inquiry: criteriology and relativism in action, *Psychology of Sport and Exercise,* 10(5), 491-497, doi:10.1016/j.psychsport.2009.02.006

Stake, R. E. (2005) Qualitative Case Studies In Denzin, N.K. & Lincoln, Y.S. (Eds.) *The Sage handbook of qualitative research* (p. 443–466). Sage Publications Ltd.

Stein, M. (1953) Creativity and culture, *The journal of psychology,* 36(2), 311-322, doi:10.1080/00223980.1953.9712897

Sternberg, R. J., & Lubart, T. I. (1991). An investment theory of creativity and its development. *Human Development,* 34, 1–31. doi:10.1159/000277029

Sternberg, R.J. & Lubart, T. (1996) Investing in creativity, *American Psychologist*, 51(7), 677-688

Sternberg, R., & Lubart, T. (1999) The concept of creativity: Prospects and paradigms. In R. Sternberg (Ed.) *Handbook of creativity* (pp. 3–15). Cambridge: Cambridge University Press.

Sternberg, R. J., & Grigorenko, E. L. (2001). Unified psychology [Editorial]. *American Psychologist, 56*(12), 1069–1079, doi:10.1037/0003-066X.56.12.1069

Sternberg, R. J., & Williams, W. M. (2001). *Educational psychology*. Boston, MA: Allyn & Bacon

Sternberg, R.J. (2003) *Wisdom, Intelligence, and Creativity Synthesized*, Cambridge University Press

Sternberg, R.J. (2019) Evaluation of Creativity Is Always Local. In In Lebuda, I., & Glăveanu, V. (Eds.) *The Palgrave Handbook of Social Creativity Research* (pp. 393-406) Palgrave Macmillan.

Sternberg, R. J. (2018). A triangular theory of creativity. *Psychology of Aesthetics, Creativity, and the Arts,* 12(1), 50–67, doi:10.1037/aca0000095

Stokols, D. (2018) *Social Ecology in the Digital Age: solving complex problems in a globalized world,* Academic Press/Elsevier

Streufert, S. (1997) Complexity: an integration of theories, *Journal of Applied Social Psychology,* 27(23), 2068-2095, doi:10.1111/j.1559-1816.1997.tb01641.x

Sugden, J. & Tomlinson, A. (1998) Power and resistance in the governance of world football: theorizing FIFA's transnational impact, *Journal of Sport and Social Issues,* 22(3), 299-316, doi:10.1177%2F019372398022003005

Szymanski, S. (2006) The future of football in Europe. In Guerrero, P.R., Késenne, S., & Villar, J. (Eds.), *Sports economics after fifty years: essays in honour of Simon Rottenberg* (pp.191-210) Ediciones de la Universidad de Oviedo

Szymanski, S. (2010) *Football Economics and Policy,* London:Palgrave Macmillan

Tamarit, X. (2016). *Periodizacion tactica versus Periodizacion tactica [Tactical Periodisation versus Tactical Periodisation],* Buenos Aires: Librofutbol.com.

Tan, C. W. K., Chow, J. Y., & Davids, K. (2012). 'How does TGfU work?': examining the relationship between learning design in TGfU and a nonlinear pedagogy. *Physical Education & Sport Pedagogy*, 17(4), 331–348. doi:10.1080/17408989.2011.582486

Tanggaard, L. (2007) Boundary Crossing between School and Work, *Journal of Education and Work,* 20(5), 453-466. doi:10.1080/13639080701814414

Tanggaard, L. (2008) *Kreativitet skal læres – når talent bliver til innovation. [Creativity and learning: when talent turns into innovation]*. Aalborg: Aalborg Universitetsforlag.

Tanggaard, L. (2013) The Socio-materiality of Creativity, *Culture and Psychology,* 19(1), 20-32, doi:10.1177/1354067X12464987

Tanggaard, L. (2014) A situated model of creative learning, *European Educational Research Journal,* 13(1), 107-116, doi:10.2304/eerj.2014.13.1.107

Tanggaard, L., Laursen, D. N., & Szulevicz, T. (2016). The grip on the handball – a qualitative analysis of the influence of materiality on creativity in sport.

Qualitative Research in Sport, Exercise and Health, 8(1), 79–94. doi:10.1080/2159676X.2015.1012546

Tanggaard, L. (2019) Organizational creativity from a situated and cultural psychological perspective. In Bendassolli, P.F. (Eds.) *Culture, work and psychology: Invitations to dialogue* (pp.185-200) Information Age Publishing

Taylor, B. (2014) Interviewing & Analysis. In Taylor, B. & Francis, K. (Eds.) *Qualitative Research in the Health Sciences: Methodologies, Methods and Processes* (pp.205-223) Oxon:Routledge

Taylor, D. (2011) *This is the One: Sir Alex Ferguson, the uncut story of a football genius*, Aurum

Tenga, A. and Larsen, Ø. (2003) Testing the validity of match analysis to describe playing styles in football. *International Journal of Performance Analysis in Sport*, 3(2), 90–102

Tetteh, D. & Lengel, L. (2017) The urgent need for health impact assessment: proposing a transdisciplinary approach to the e-waste crisis in sub-Saharan Africa, *Global Health Promotion,* 24(2), 35-42, doi:10.1177%2F1757975916686926

Thomas, W. & Thomas, D. (1928) *The Child in America: Behavior Problems and Programs.* New York: Alfred A. Knopf

Thorpe H. & Olive, R. (2016) Conducting Observations in Sport and Exercise Settings. In Smith, B. & Sparkes, A.C. (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp.124-138), Routledge.

Thurstone, L.L. (1938) *Primary Mental Abilities,* Chicago:University of Chicago Press.

Tiesler, N. & Coelho, J.N. (2007) Globalized Football at a Lusocentric Glance: Struggles with Markets and Migration, Traditions and Modernities, the Loss and the Beauty, *Soccer & Society,* 8(4), 419-439, doi:10.1080/14660970701440675

Tobar, J.B. (2018) *Periodização Tática [Tactical Periodisation]*, Prime Books

Toohey, K., MacMahon, C., Weissensteiner, J., Thomson, A., Auld, C., Beaton, A.& Woolcock, G. (2018) Using transdisciplinary research to examine talent identification and development in sport, *Sport in Society,* 21(2), 356-375, doi:10.1080/17430437.2017.1310199

Torrance, E. P. (1966). *The Torrance Tests of Creative Thinking-Norms-Technical Manual Research Edition-Verbal Tests, Forms A and B-Figural Tests, Forms A and B.*, Princeton, NJ: Personnel Press

Torrents, C., Ric, A., Hristovski, R., Torres-Ronda, L., Vicente, E., & Sampaio, J. (2016). Emergence of exploratory, technical and tactical behavior in small-sided soccer games when manipulating the number of teammates and opponents. *PLoS ONE*, 11(12), 1–15. doi:10.1371/journal.pone.0168866

Tracy, S.J. (2019) *Qualitative Research Methods: Collecting Evidence, Crafting Analysis, Communicating Impact (2nd ed.),* Willey-Blackwell.

Transfermarkt (2021a) Percentage of foreigners on the Premier League 2019/2020, *Transfermarkt*, https://www.transfermarkt.com/premier-league/gastarbeiter/wettbewerb/GB1/saison_id/2019

Transfermarkt (2021b) Transfer Income and Expenditure Liga NOS Portugal (10/11 to 20/21), *Transfermarkt*, https://www.transfermarkt.com/transfers/einnahmenausgaben/statistik/plus/0?ids=a&sa=&saison_id=2010&saison_id_bis=2020&land_id=136&nat=&pos=&altersklasse=&w_s=&leihe=&intern=0

Uehara, L., Button, C., Araújo, D., Renshaw, I., & Davids, K. (2018) The role of informal, unstructured practice in developing football expertise: the case of Brazilian Pelada, *Journal of Expertise*, 1(3), 162-180

Valsassina, (n.d.) Projeto Educativo, *Colégio Valsassina*, https://www.cvalsassina.pt/projeto-educativo

Valsiner, J. (2014). *An invitation to cultural psychology.* Sage Publications, Inc.

Vamplew, W. (2006) The development of team sports before 1914. In Andreff, W. & Szymanski, S., (Eds.) *Handbook on the Economics of Sport (*pp.435-442) Edward Elgar Publishing

Van Regenmortel, M.H. (2004) Reductionism and complexity in molecular biology, *EMBO Reports*, 5(11), 1016-1020, doi:10.1038/sj.embor.7400284

Vansteenkiste, M., Ryan, R.M., & Soenens, B. (2020) Basic psychological need theory: advancements, critical themes, and future directions, *Motivation and Emotion*, 44, 1-31

Vaughan, J., Mallett, C.J., Davids, K., Potrac, P., & López-Felip, M. (2019) Developing Creativity to Enhance Human Potential in Sport: a Wicked Transdisciplinary Challenge, *Frontiers in Psychology*, doi:10.3389/fpsyg.2019.02090

Veraksa, A. N., & Gorovaya, A. E. (2011). Effect of imagination on sport achievements of novice soccer players. *Psychology in Russia: State of Art*, 5(1), 495–504. doi:10.11621/pir.2011.0032

Vernon, P. E. (1970). *Creativity.* Penguin.

Vygotsky, L.S. (1978) *Mind in Society*, Harvard University Press

Walia, C. (2019) A dynamic definition of creativity, *Creativity Research Journal*, 31(3), 237-247, doi:10.1080/10400419.2019.1641787

Wallas, G. (1926). *The art of thought.* New York: Harcourt, Brace and Company.

Ward, T. B., Smith, S. M., & Finke, R. A. (1999). Creative cognition. In Sternberg, R.J. (Ed.), *Handbook of creativity* (pp. 189 – 213). Cambridge: Cambridge Univ. Press.

Weisberg, R.W. (2015) On the usefulness of "value" in the definition of creativity, *Creativity Research Journal*, 27(2), 111-124, doi:10.1080/10400419.2015.1030320

Weissensteiner, J. (2017) Method in the madness: working towards a viable 'paradigm' for better understanding and supporting the athlete pathway. In Baker, J., Cobley, S., Schorer, J., & Wattie, N. (Eds.) *Routledge Handbook of Talent Identification and Development in Sport* (pp.133-149) Routledge.

West, M. A. (1990). The social psychology of innovation in groups. In West, M.A. & Farr, J.L. (Eds.), *Innovation and creativity at work: Psychological and organizational strategies* (pp. 309–333) Chichester: Wiley

Williams, A.M., & Reilly, T. (2000) Talent identification and development in soccer, *Journal of Sports Sciences*, 18(9), 657-667. doi:10.1080/02640410050120041

Wilson, J. (2008) *Inverting the Pyramid: the history of football tactics*, London:Orion

Woodman, R.W., Sawyer, J.E., & Griffin, R.W. (1993), Toward a theory of organizational creativity, *Academy of Management Review,* 18(2), 293-321, doi:10.5465/amr.1993.3997517

Woodman, R. W. (2013). The interactionist model of organizational creativity. In E. H. Kessler (Ed.) *Encyclopedia of management theory* (p.395) Thousand Oaks: Sage

Wulf, G. (2013) Attentional focus and motor learning: a review of 15 years, *International Review of Sport and Exercise Psychology,* 6(1), 77-104, doi:10.1080/1750984X.2012.723728

Yamamoto, Y., & Yokoyama, K. (2011). Common and unique network dynamics in football games. *PLoS ONE*, 6(12), 1–6. doi:10.1371/journal.pone.0029638

Yin, R. (2018) *Case study research and applications: designs and methods (6th ed.),* Los Angeles:SAGE

Zabelina, D., Colzato, L., Beeman, M., & Hommel, B. (2016) Dopamine and the creative mind: individual differences in creativity are predicted by ineractions between dopamine genes DAT and COMT, *PLoS ONE,* doi:10.1371/journal.pone.0146768

Zeitoun, M., Lankford, B., Krueger, T., Forsyth, T., Carter, R., Hoekstra, A., Taylor, R., Varis, O., Cleaves, F., Boelens, R., Swatuk, L., Tickner, D., Scott, C.A., Mirumachi, N., & Matthews, N. (2016) Reductionist and integrative research approaches to complex water security policy challenges, *Global Environmental Change*, 39, 143-154, doi:10.1016/j.gloenvcha.2016.04.010

Zhang, Y. & Wildemuth, B. (2009) Unstructured interviews. In Wildemuth, B. (Ed.) *Applications to Social Research Methods to Questions in Information and Library Science (2nd ed.)* (pp.239-247) Santa Barbara, CA:Libraries Unlimited

Appendices

Appendix 1 - Participant Information Sheet Study 1

Participant Information Sheet

You are invited to participate in a web-based online/telephone survey on perceptions of creativity in professional football. You have been invited to participate because you are a Head of Academy Coaching of a club whose First Team plays on the Premier League or Championship.

This survey is part of a research project being conducted by Francisco Fardilha, a research postgraduate and Associate Fellow at the University of Stirling. It should take approximately 10 minutes to complete. You will be given some questions to answer.

Please read through these terms before agreeing to participate below.

Aims of the project

This project aims to identify and explore perceptions of football-specific creativity within European academies. Full-time Heads of Academy Coaching and Heads of Academy Recruitment in Portugal, Italy, and England will be surveyed regarding perceptions of creativity in football, with an emphasis on their country. Results from this project will assist in the development of a definition of football-specific creativity and your votes will be essential for the next stage of the project: a life history of England's most creative football player currently in activity.

Do I have to take part?

No. Your participation in this survey is voluntary. You may refuse to take part in the research or exit the survey at any time without penalty. With regards to the online survey you can do so by pressing the 'Exit' button / closing the browser. You are free to decline to answer any question for any reason – we have included a 'prefer not to say' option in the online survey.

Are there any potential risks in taking part?

There are no foreseeable risks involved in participating in this survey.

Are there any benefits in taking part?

There will be no direct benefit to you from taking part in this research.

Expenses/Payments

There will be no payment for taking part in this project.

What happens to the data I provide?

Your answers will be completely anonymous, and we will use all reasonable endeavours to keep them confidential. Your data will be stored in a password-protected file. Your IP address will not be stored. Your personal data will be kept for 10 years from project completions in a secure server located at the University of Stirling and then will be securely destroyed.

Will the research be published?

The research will be published in peer-reviewed journals, conferences, and as part of a doctoral dissertation.

Who has reviewed this research project?

This project has been ethically approved via The University of Stirling's General University Ethics Panel.

Your rights

You have the right to request to see a copy of the information we hold about you and to request corrections or deletions of the information that is no longer required.

You have the right to withdraw from this project at any time without giving reasons and without consequences to you. You also have the right to object to us processing relevant personal data however, please note that once the data are being analysed and/or results published it may not be possible to remove your data from the study.

Whom do I contact if I have concerns about this study or I wish to complain?

If you have any further questions or concerns regarding this study you can contact the Principal Investigator, Mr Francisco Fardilha, via e-mail francisco.fardilha@stir.ac.uk. You can also contact the Project's Supervisor, Dr. Justine Allen, through the address justine.allen@stir.ac.uk.

You have the right to lodge a complaint against the University regarding data protection issues with the Information Commissioner's Office (https://ico.org.uk/concerns/).

The University's Data Protection Officer is Joanna Morrow, Deputy Secretary. If you have any questions relating to data protection these can be addressed to data.protection@stir.ac.uk in the first instance.

Thanks for your participation.

Appendix 2 – Interview Guide Study 1

Interview #_____

Date___/____/_____

Interview Schedule

Welcome and thank you for your participation today. My name is Francisco Fardilha and I am a doctoral student at Stirling University, in Scotland. This interview will take about 60 minutes and will include four groups of questions regarding your perceptions of creative actions, creative players, creative environments, and the development of the creative process. experiences. I would like your permission to record this interview in an audio format. This recording will not be made public at any point and it will only be used to accurately document the information you convey. If at any time during the interview you wish to discontinue the use of the recorder or the interview itself, please feel free to let me know. All your responses are confidential. Your responses will remain confidential and will be used to develop a better understanding of how you and your peers view creativity and the identification and development of creative players. The purpose of this study is to increase our understanding of football-specific creativity and help developing more creative players in the future.

I would like to remind you of your written consent to participate in this study. I am the principal investigator, specifying your participation in the research project: 'What are we looking for?': professional soccer academy coaches and scouts' perceptions of creativity'. You and I have both signed and dated each copy, certifying that we agree to continue this interview. You will receive one copy and I will keep the other under lock and key, separated from your reported responses.

Your participation in this interview is completely voluntary. If at any time you need to stop, take a break, or go back to a previous question, please let me know. You may also withdraw your participation at any time without consequence. Do you have any questions or concerns before we begin?

Then with your permission we will begin the interview.

1. **Demographics** (this section intends to ensure participants meet the eligibility criteria).

1.1. How long have you been a Head of Academy Coaching/Head of Academy Recruitment? Can you please explain me your role within the club's structure and the areas you are responsible for?

1.2. Before being Head of Academy Coaching/Head of Academy Recruitment, how long have you been a coach/scout before? At what level (regional/national/international) were the clubs you coached/scouted for playing?

1.3. Have you been through the formal coach/scout education pathway? What qualifications do you hold now?

1.4. How would you define yourself as a coach/scout? Which are your main characteristics and ambitions?

1.5. What is your philosophy with regards to player development? And your current club's?

2. Profile and Characteristics of a Creative Player

2.1. How would you define a creative player? What are his/her key attributes?
2.2. When you watch a match of football either live or on television, how can you identify a creative player? How is he/she different from his/her colleagues?
2.3. At what point in a player's development can you see that difference in creative ability between players? Do you think it is something permanent?
2.4. Do you think there are some personality traits linked with creativity? If so, which?
2.5. Do you think the attributes of a creative player vary depending on the club, country, or the league the player is playing in? Why? Can you give me any examples?
2.6. Who are for you the most creative players in your country? Why do you consider them creative?
2.7. And in the World? Why?

3. The development and trainability of creativity

3.1. Is creative ability in a football player something innate - born with the player – or do you think it can be developed through training?
3.2. Do you think genetics plays a role in creative ability? Why?
3.3. How do you think creativity can be developed over time? Is there such thing as 'creativity training' within a football session?
3.4. Within your academy, do you have any strategies in place to develop creativity in players? If so, which and based on what sort of knowledge? If not, why not?
3.5. Do you think there is a crucial period for creative development in the players' pathway or is it somehow a steady growth curve?
3.6. Is a creative player different from an expert player? Why? Can you give me an example?
3.7. Is there any difference between creativity and game intelligence? Can you give me an example?

4. Creative environments

4.1. What is the importance of environment in the development of a creative player?
4.2. What are the differences between environments that are conducive to creativity or environments that hinder it?

4.3. Within your academy, what do you do to promote an environment that allows for the development of creativity? Where did you get knowledge/information from on what/how to do it?

4.4. When you try to identify and recruit creative players, do you look for them in a particular setting/environment?

4.5. Do you think the most creative players in your country and in the World, came from environments with similar characteristics? If so, which? If not, why not?

5. Creativity in the Game.

5.1. What is, in your opinion, a creative action in football?

5.2. How is it distinguishable from an intelligent action?

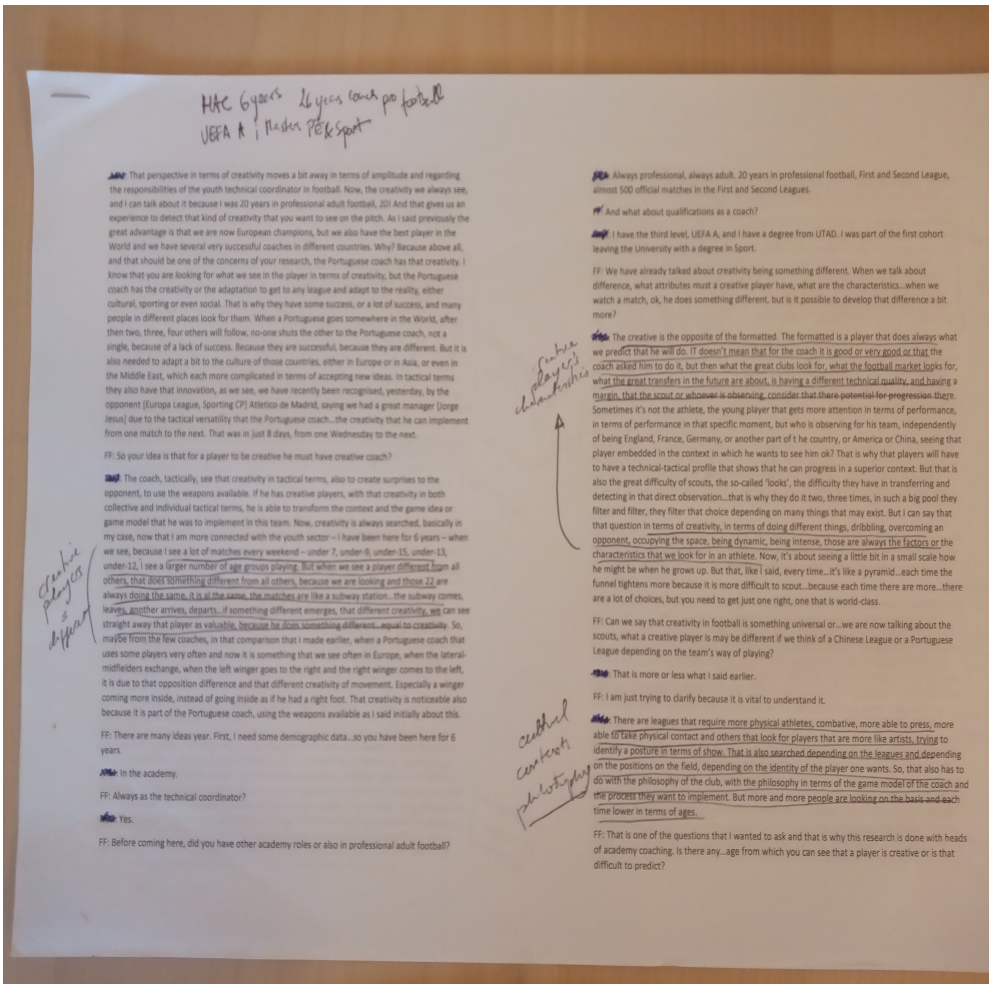
5.3. When can a player be creative? In attack? In defense? In both? Please explain.

5.4. Does creativity depend on having the possession of the ball? Why?

Is there anything else you would like to add?

If not, this is the end of this interview. Once again, thank you for your cooperation.

Appendix 3 – Images of inductive coding procedure study 1



HAC 6 years 16 years coach pro football
UEFA A ; Master PE & Sport

That perspective in terms of creativity moves a bit away in terms of amplitude and regarding the responsibilities of the youth technical coordinator in football. Now, the creativity we always see, and I can talk about it because I was 20 years in professional adult football, 20! And that gives us an experience to detect that kind of creativity that you want to see on the pitch. As I said previously the great advantage is that we are now European champions, but we also have the best player in the World and we have several very successful coaches in different countries. Why? Because above all, and that should be one of the concerns of your research, the Portuguese coach has that creativity. I know that you are looking for what we see in the player in terms of creativity, but the Portuguese coach has the creativity or the adaptation to get to any league and adapt to the reality, either cultural, sporting or even social. That is why they have some success, or a lot of success, and many people in different places look for them. When a Portuguese goes somewhere in the World, after then two, three, four others will follow, no-one shuts the other to the Portuguese coach, not a single, because of a lack of success. Because they are successful, because they are different. But it is also needed to adapt a bit to the culture of those countries, either in Europe or in Asia, or even in the Middle East, which each more complicated in terms of accepting new ideas. In tactical terms they also have that innovation, as we see, we have recently been recognised, yesterday, by the opponent (Europa League, Sporting CP) Atletico de Madrid, saying we had a great manager [Jorge Jesus] due to the tactical versatility that the Portuguese coach...the creativity that he can implement from one match to the next. That was in just 8 days, from one Wednesday to the next.

FF: So your idea is that for a player to be creative he must have creative coach?

The coach, tactically, see that creativity in tactical terms, also to create surprises to the opponent, to use the weapons available. If he has creative players, with that creativity in both collective and individual tactical terms, he is able to transform the context and the game idea or game model that he was to implement in this team. Now, creativity is always searched, basically in my case, now that I am more connected with the youth sector – I have been here for 6 years – when we see, because I see a lot of matches every weekend – under 7, under-9, under-15, under-13, under-12, I see a larger number of age groups playing. But when we see a player different from all others, that does something different from all others, because we are looking and those 22 are always doing the same, it is all the same, the matches are like a subway station...the subway comes, leaves, another arrives, departs...if something different emerges, that different creativity, we can see straight away that player as valuable, because he does something different...equal to creativity. So, maybe from the few coaches, in that comparison that I made earlier, when a Portuguese coach that uses some players very often and now it is something that we see often in Europe, when the lateral-midfielders exchange, when the left winger goes to the right and the right winger comes to the left, it is due to that opposition difference and that different creativity of movement. Especially a winger coming more inside, instead of going inside as if he had a right foot. That creativity is noticeable also because it is part of the Portuguese coach, using the weapons available as I said initially about this.

FF: There are many ideas year. First, I need some demographic data...so you have been here for 6 years.

In the academy.

FF: Always as the technical coordinator?

Yes.

FF: Before coming here, did you have other academy roles or also in professional adult football?

Always professional, always adult. 20 years in professional football, First and Second League, almost 500 official matches in the First and Second Leagues.

And what about qualifications as a coach?

I have the third level, UEFA A, and I have a degree from UTAD. I was part of the first cohort leaving the University with a degree in Sport.

FF: We have already talked about creativity being something different. When we talk about difference, what attributes must a creative player have, what are the characteristics...when we watch a match, ok, he does something different, but is it possible to develop that difference a bit more?

The creative is the opposite of the formatted. The formatted is a player that does always what we predict that he will do. IT doesn't mean that for the coach it is good or very good or that the coach asked him to do it, but then what the great clubs look for, what the football market looks for, what the great transfers in the future are about, is having a different technical quality, and having a margin, that the scout or whoever is observing, consider that there potential for progression there. Sometimes it's not the athlete, the young player that gets more attention in terms of performance, in terms of performance in that specific moment, but who is observing for his team, independently of being England, France, Germany, or another part of t he country, or America or China, seeing that player embedded in the context in which he wants to see him ok? That is why that players will have to have a technical-tactical profile that shows that he can progress in a superior context. But that is also the great difficulty of scouts, the so-called 'looks', the difficulty they have in transferring and detecting in that direct observation...that is why they do it two, three times, in such a big pool they filter and filter, they filter that choice depending on many things that may exist. But I can say that that question in terms of creativity, in terms of doing different things, dribbling, overcoming an opponent, occupying the space, being dynamic, being intense, those are always the factors or the characteristics that we look for in an athlete. Now, it's about seeing a little bit in a small scale how he might be when he grows up. But that, like I said, every time...it's like a pyramid...each time the funnel tightens more because it is more difficult to scout...because each time there are more...there are a lot of choices, but you need to get just one right, one that is world-class.

FF: Can we say that creativity in football is something universal or...we are now talking about the scouts, what a creative player is may be different if we think of a Chinese League or a Portuguese League depending on the team's way of playing?

That is more or less what I said earlier.

FF: I am just trying to clarify because it is vital to understand it.

There are leagues that require more physical athletes, combative, more able to press, more able to take physical contact and others that look for players that are more like artists, trying to identify a posture in terms of show. That is also searched depending on the leagues and depending on the positions on the field, depending on the identity of the player one wants. So, that also has to do with the philosophy of the club, with the philosophy in terms of the game model of the coach and the process they want to implement. But more and more people are looking on the basis and each time lower in terms of ages.

FF: That is one of the questions that I wanted to ask and that is why this research is done with heads of academy coaching. Is there any...age from which you can see that a player is creative or is that difficult to predict?

Figure 4: Interview transcript example with initial notes

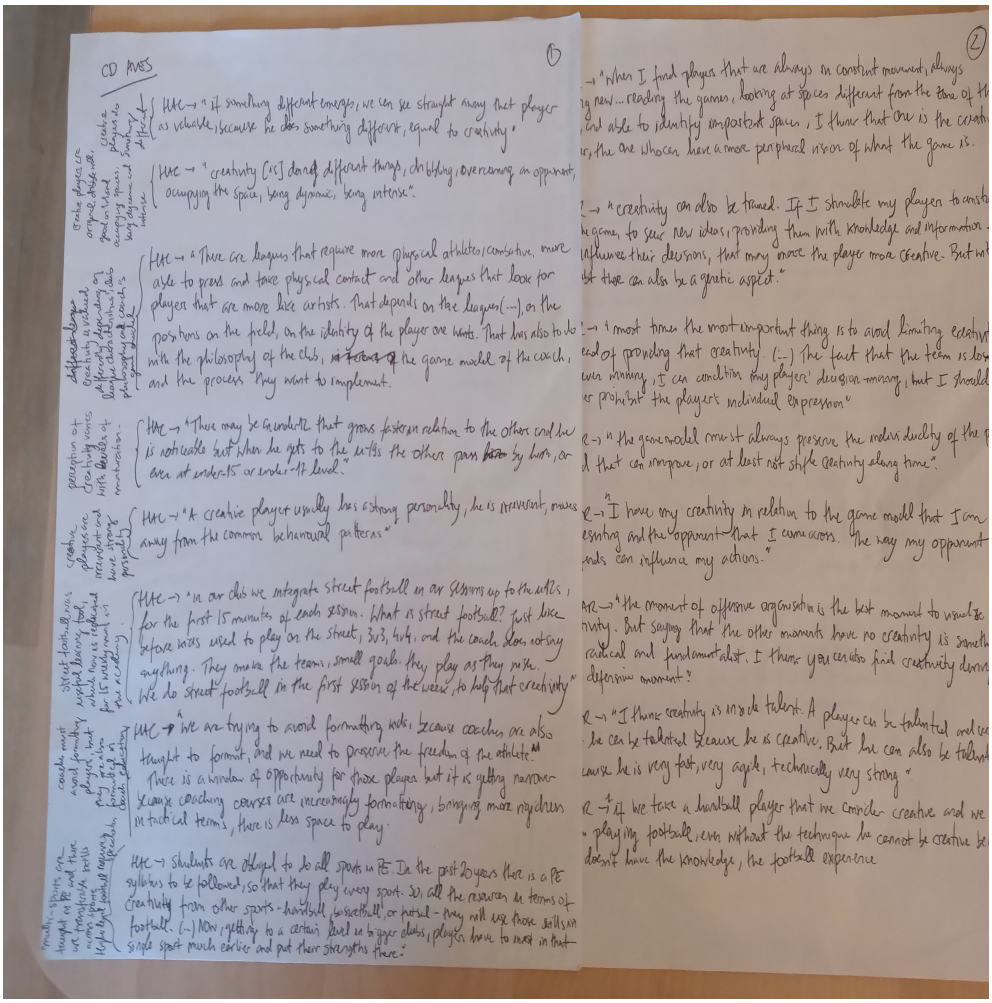


Figure 5: Example of selected quotes with sub-themes PTC4

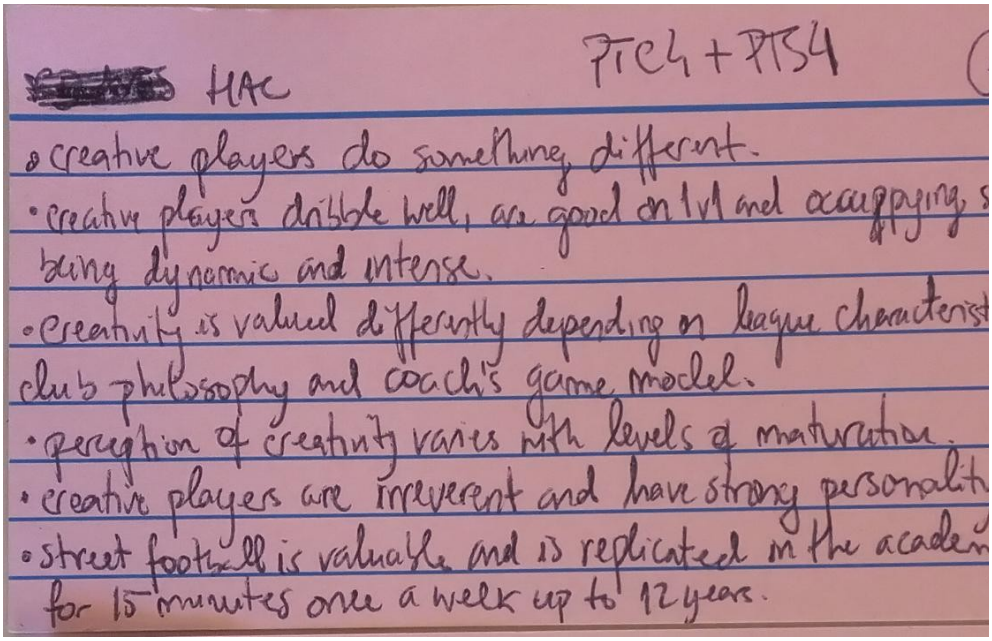


Figure 6: Example of compilation of sub-themes PTC4

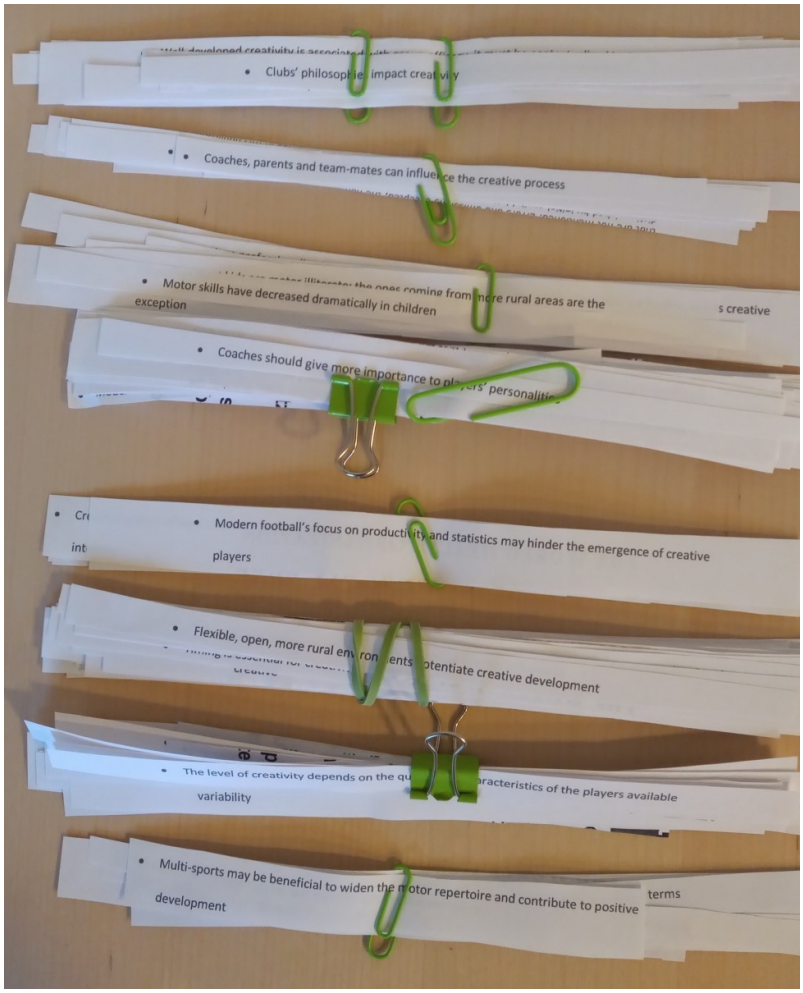


Figure 7: Grouping of sub-themes into candidate themes

Appendix 4 – Participation Information Sheet Players Study 2

Version date: 14 March 2019

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Participant Information Sheet - Players

1. Background and aims of the project

Hello! My name is Francisco de Sa Fardilha, and I am a Portuguese researcher from the University of Stirling, in Scotland. A researcher is a person that tries to learn more about things that are important for people's lives and for society. I am trying to learn more about creativity in youth football and would like to invite you to take part in my research project.

Hi, this is me, Francisco!

2.1. Observations

I will be spending one month in your club's academy looking at the environment in which you train and play. I will be watching all training sessions and matches, taking some notes, and speaking to parents, coaches, and some of your team-mates. Your routine will not change. I will try my best to disturb as little as possible.

It is important that you understand that my observations and anything you see me writing is not directly about you or your team-mates. I am not evaluating or judging you, just trying to learn more about football and what happens in your academy.

*This is what an observation looks like. I will be like the gentleman in the grey tracksuit, watching the training session or the match from a distance, without **getting involved**.*

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2.2. Focus group

Did you know that according to the United Nations, children have the right to participate in ecision-making processes that may be **important for** their lives and to influence decisions taken on their behalf? Well, so far people like me have not really heard children about their thoughts and experiences related to creativity in sport. So, I intend to give you a voice and listen **carefully** to your ideas and feelings.

However, I am aware that speaking to an unknown adult can be a difficult experience, and that not everyone feels comfortable doing. That is why I will be organising a kind of group interview – we call it focus group - so that together with other team-mates, you can have the opportunity to let me know your thoughts and experiences about creativity and football. Don't worry, there are no right or wrong answers, and I will be making this a fun and interesting experience while ensuring that you and your team-mates are comfortable. Your coach or parent will not be in the room so you can talk freely. I won't share anything you say with them. However, there will be another adult with me in the room, someone that works in your club and that will be there to make sure everything goes well.

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2. **Why have I been invited to take part?**

You have been invited because are one of the players in your under-13's team.

3. **What will happen if I take part in the interviews/focus group?**

If your parent/guardian allows you to take part in the focus group, I will invite you to join a maximum of seven (7) other team-mates in a group interview, which will last no more than one hour. Although your parent/guardian may agree to your participation, we will also ask you before starting the interview, if you read and understood this sheet, and if you are sure that you want to take part. I will then remind you that if you do not feel comfortable at any moment, you can stop participating in the group interview at any moment.

The interview will take place in your club's academy on a date that suits everyone. We will record the sound of the conversation, but no-one will know what you said, except for your team-mates. Everyone's answers will **remain a secret**, except if you or your team-mates mention something that means you or one of them may be in danger. We will only do this interview once.

A group of experienced people in my University – something we call an Ethics committee - has also checked my project to make sure that no-one (including myself!) gets hurt or has any problems because of this study!

4. **Do we have to take part in the interviews?**

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No. You don't have to take part in the group interview. **If you do think you want to take part and your parent/guardian authorises you, you can decide to quit until the end of the interview/focus group without needing to explain why and without any consequence. However, it is important that you are aware that once the group interview is complete, I won't be able to erase any answers, because it is difficult to eliminate one person's contribution. But don't worry, I will make sure no-one finds out who you are nor what you said.** You will be given this information sheet to keep, and I will ask you some questions before starting the focus group to make sure you know what my project is about, that you know your rights, and that you are sure that you want to take part.

5. Are there any potential risks in taking part?

There are no risks that we can think of linked to participation in this study.

6. Are there any benefits in taking part?

You will not be given anything for helping me. However, you will be helping other people who have the same job as me learning more about creativity in sport and me, and hopefully, we will be able to help other children like you and other coaches and parents in the future.

So, your help is much appreciated!

7. What happens to the data I provide?

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It will be kept **secret** so no-one will know what you said. Before we start the group interview, I will ask you to choose a different name for you to use during the interview. It can be for example the name of your favourite football players or any other name you can think of. You can be creative! Only I and my supervisors (my bosses!) will have access to the research data, and we will make sure we keep it safe and confidential at all points.

8. Recorded media

As it is really difficult to listen **carefully** to what you and your colleagues say and write at the same time, I will have to record the sound of our interview. This will help me remember all the important things you and your colleagues say! I will never publish the sound of the interview. I will write it down, and then it will be kept safe, in a place that only I have access to.

9. Will the research be published?

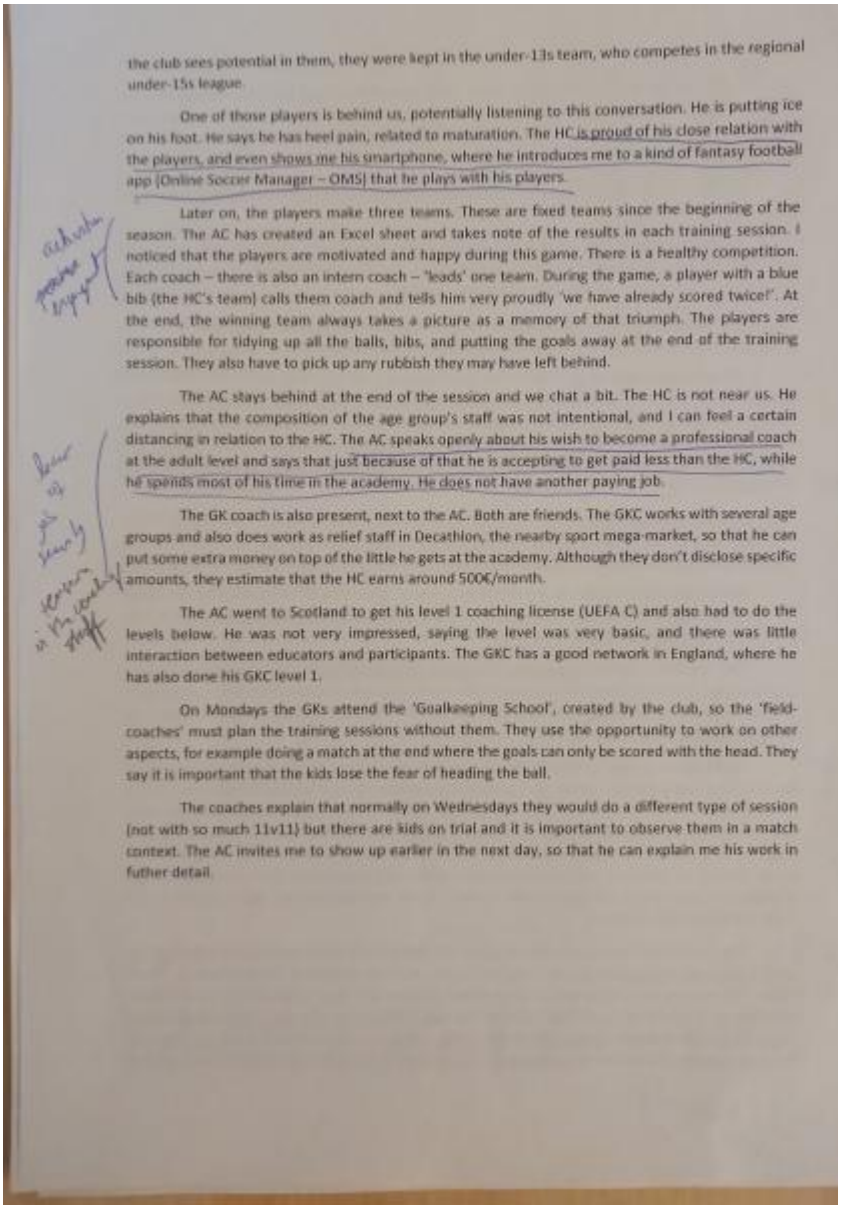
The research may be published in a scientific kind of magazine and in a big book that I need to write about my work, something called 'thesis'. I will also share my conclusions with your club, but no-one will know what you said.

10. Who do I contact if I have any doubts about this study or if I want to complain?

If you would like to know more about my project or if you want to make a complaint you can let your parent/guardian or your coach know, and they will make sure that you are heard.

Thank you for reading this document and for your participation.

Appendix 5 – Example of Field Notes Study 2



the club sees potential in them, they were kept in the under-13s team, who competes in the regional under-15s league.

One of those players is behind us, potentially listening to this conversation. He is putting ice on his foot. He says he has heel pain, related to maturation. The HC is proud of his close relation with the players, and even shows me his smartphone, where he introduces me to a kind of fantasy football app (Online Soccer Manager – OMS) that he plays with his players.

Later on, the players make three teams. These are fixed teams since the beginning of the season. The AC has created an Excel sheet and takes note of the results in each training session. I noticed that the players are motivated and happy during this game. There is a healthy competition. Each coach – there is also an intern coach – 'leads' one team. During the game, a player with a blue bib (the HC's team) calls them coach and tells him very proudly 'we have already scored twice!'. At the end, the winning team always takes a picture as a memory of that triumph. The players are responsible for tidying up all the balls, bibs, and putting the goals away at the end of the training session. They also have to pick up any rubbish they may have left behind.

The AC stays behind at the end of the session and we chat a bit. The HC is not near us. He explains that the composition of the age group's staff was not intentional, and I can feel a certain distancing in relation to the HC. The AC speaks openly about his wish to become a professional coach at the adult level and says that just because of that he is accepting to get paid less than the HC, while he spends most of his time in the academy. He does not have another paying job.

The GK coach is also present, next to the AC. Both are friends. The GKC works with several age groups and also does work as relief staff in Decathlon, the nearby sport mega-market, so that he can put some extra money on top of the little he gets at the academy. Although they don't disclose specific amounts, they estimate that the HC earns around 500€/month.

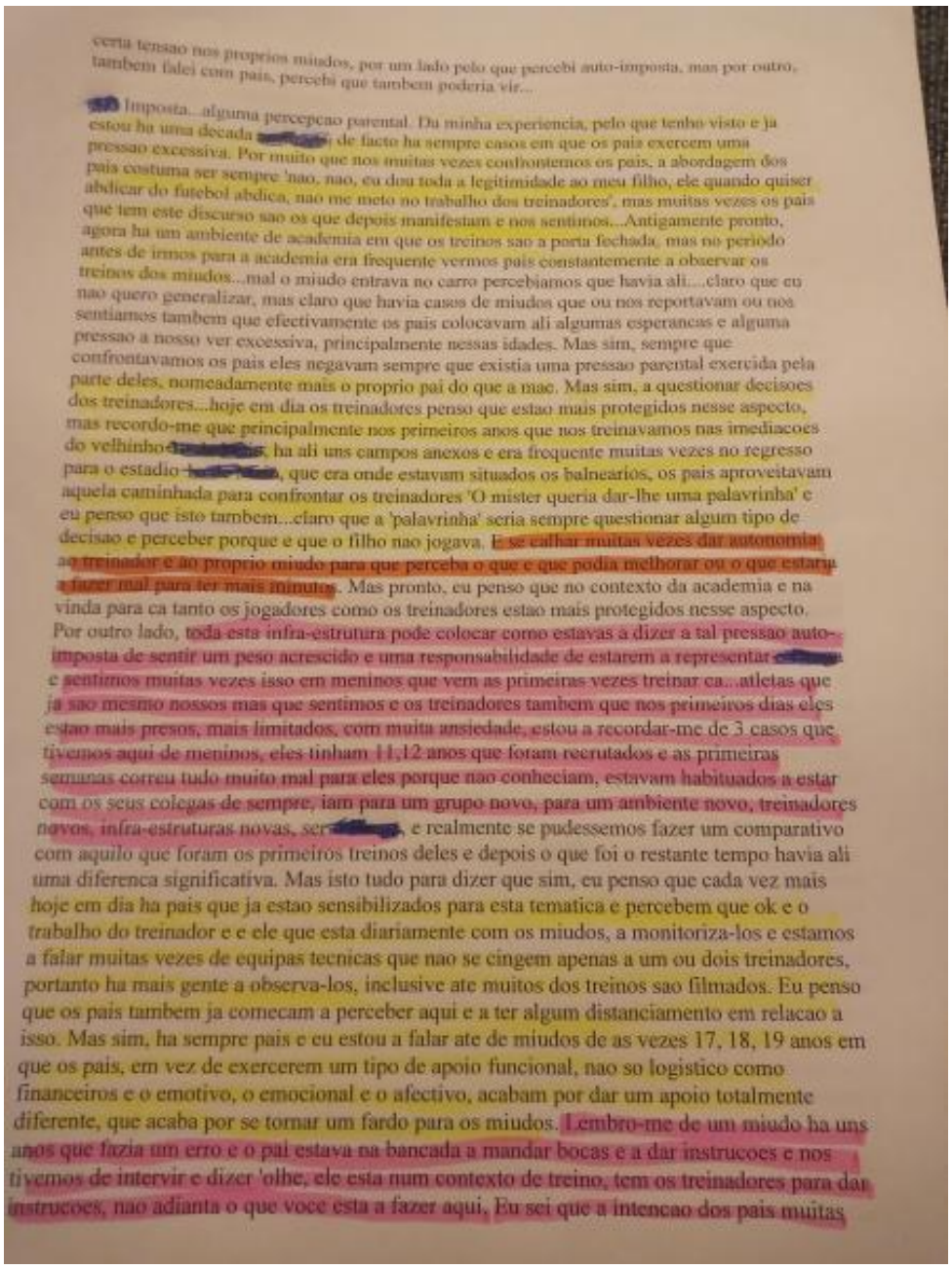
The AC went to Scotland to get his level 1 coaching license (UEFA C) and also had to do the levels below. He was not very impressed, saying the level was very basic, and there was little interaction between educators and participants. The GKC has a good network in England, where he has also done his GKC level 1.

On Mondays the GKs attend the 'Goalkeeping School', created by the club, so the 'field-coaches' must plan the training sessions without them. They use the opportunity to work on other aspects, for example doing a match at the end where the goals can only be scored with the head. They say it is important that the kids lose the fear of heading the ball.

The coaches explain that normally on Wednesdays they would do a different type of session (not with so much 11v11) but there are kids on trial and it is important to observe them in a match context. The AC invites me to show up earlier in the next day, so that he can explain me his work in futher detail.

Figure 8: Example of transcribed field notes with emerging issue identified on the side

A

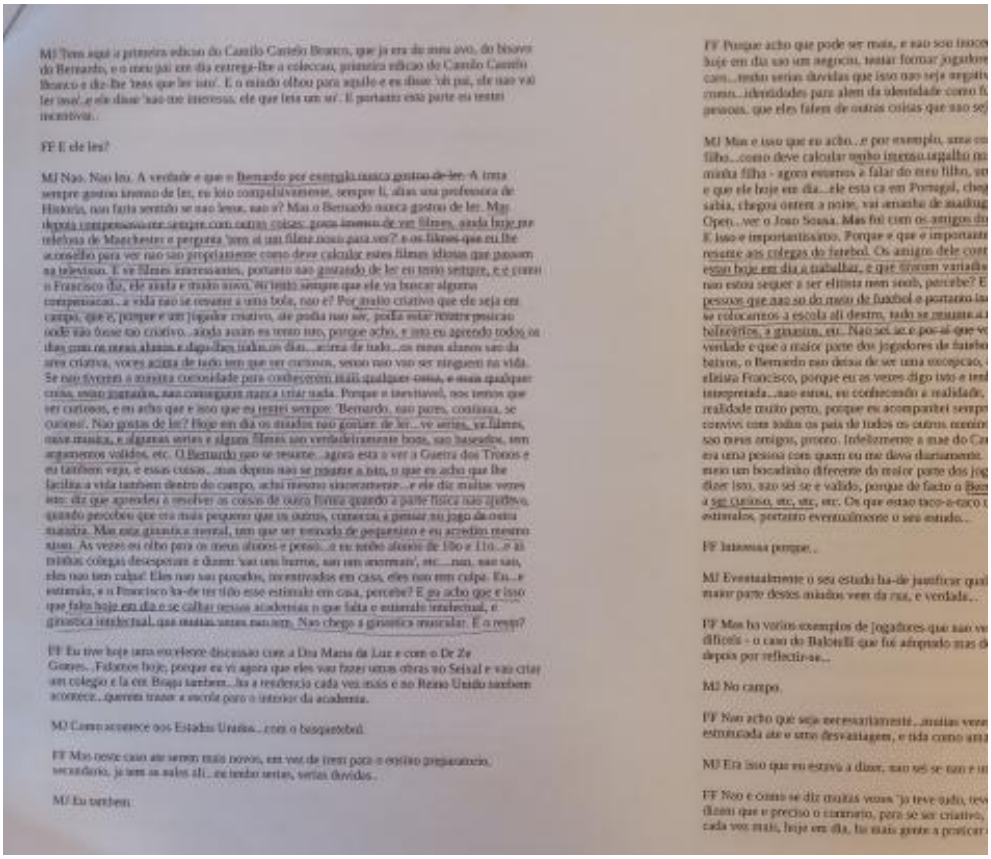


certa tensao nos proprios miudos, por um lado pelo que percebi auto-imposta, mas por outro, tambem falei com pais, percebi que tambem poderia vir...

[redacted] Imposta...alguma percepcao parental. Da minha experiencia, pelo que tenho visto e ja estou ha uma decada [redacted], de facto ha sempre casos em que os pais exercem uma pressao excessiva. Por muito que nos muitas vezes confrontemos os pais, a abordagem dos pais costuma ser sempre 'nao, nao, eu dou toda a legitimidade ao meu filho, ele quando quiser abdicar do futebol abdica, nao me meto no trabalho dos treinadores', mas muitas vezes os pais que tem este discurso sao os que depois manifestam e nos sentimos...Antigamente pronto, agora ha um ambiente de academia em que os treinos sao a porta fechada, mas no periodo antes de irmos para a academia era frequente vermos pais constantemente a observar os treinos dos miudos...mal o miudo entrava no carro percebiamos que havia ali....claro que eu nao quero generalizar, mas claro que havia casos de miudos que ou nos reportavam ou nos sentiamos tambem que efectivamente os pais colocavam ali algumas esperancas e alguma pressao a nosso ver excessiva, principalmente nessas idades. Mas sim, sempre que confrontavamos os pais eles negavam sempre que existia uma pressao parental exercida pela parte deles, nomeadamente mais o proprio pai do que a mae. Mas sim, a questionar decisoes dos treinadores...hoje em dia os treinadores penso que estao mais protegidos nesse aspecto, mas recordo-me que principalmente nos primeiros anos que nos treinavamos nas imediacoes do velhinho [redacted], ha ali uns campos anexos e era frequente muitas vezes no regresso para o estadio [redacted], que era onde estavam situados os balnearios, os pais aproveitavam aquela caminhada para confrontar os treinadores 'O mister queria dar-lhe uma palavrinha' e eu penso que isto tambem...claro que a 'palavrinha' seria sempre questionar algum tipo de decisao e perceber porque e que o filho nao jogava. E se calhar muitas vezes dar autonomia ao treinador e ao proprio miudo para que perceba o que e que podia melhorar ou o que estaria a fazer mal para ter mais minutos. Mas pronto, eu penso que no contexto da academia e na vinda para ca tanto os jogadores como os treinadores estao mais protegidos nesse aspecto. Por outro lado, toda esta infra-estrutura pode colocar como estavas a dizer a tal pressao auto-imposta de sentir um peso acrescido e uma responsabilidade de estarem a representar [redacted] e sentimos muitas vezes isso em meninos que vem as primeiras vezes treinar ca...atletas que ja sao mesmo nossos mas que sentimos e os treinadores tambem que nos primeiros dias eles estao mais presos, mais limitados, com muita ansiedade, estou a recordar-me de 3 casos que tivemos aqui de meninos, eles tinham 11,12 anos que foram recrutados e as primeiras semanas correu tudo muito mal para eles porque nao conheciam, estavam habituados a estar com os seus colegas de sempre, iam para um grupo novo, para um ambiente novo, treinadores novos, infra-estruturas novas, ser[redacted], e realmente se pudessemos fazer um comparativo com aquilo que foram os primeiros treinos deles e depois o que foi o restante tempo havia ali uma diferenca significativa. Mas isto tudo para dizer que sim, eu penso que cada vez mais hoje em dia ha pais que ja estao sensibilizados para esta tematica e percebem que ok e o trabalho do treinador e e ele que esta diariamente com os miudos, a monitoriza-los e estamos a falar muitas vezes de equipas tecnicas que nao se cingem apenas a um ou dois treinadores, portanto ha mais gente a observa-los, inclusive ate muitos dos treinos sao filmados. Eu penso que os pais tambem ja comecam a perceber aqui e a ter algum distanciamento em relacao a isso. Mas sim, ha sempre pais e eu estou a falar ate de miudos de as vezes 17, 18, 19 anos em que os pais, em vez de exercerem um tipo de apoio funcional, nao so logistico como financeiros e o emotivo, o emocional e o afectivo, acabam por dar um apoio totalmente diferente, que acaba por se tornar um fardo para os miudos. Lembro-me de um miudo ha uns anos que fazia um erro e o pai estava na bancada a mandar bocas e a dar instrucoes e nos tivemos de intervir e dizer 'olhe, ele esta num contexto de treino, tem os treinadores para dar instrucoes, nao adianta o que voce esta a fazer aqui. Eu sei que a intencao dos pais muitas

Figure 9: Example of interview preliminary coding in line using coloured markers according to Tanggaard's (2014) principles of creative learning

Appendix 7 – Example of interview transcripts Study 3



MJ Tens aqui a primeira edicao do Camilo Castelo Branco, que ja era do meu avo, do bisavo do Bernardo, e o meu pai em dia entrega-lhe a colecçao, primeira edicao do Camilo Castelo Branco e diz-lhe 'tens que ler isto'. E o miudo olhou para aquilo e eu disse 'ah pai, ele nao vai ler isto',e ele disse 'nao me interessa, ele que leia um ser'. E portanto esta parte eu tentei incentivar..

FF E ele leu?

MJ Nao. Nao leu. A verdade e que o Bernardo por exemplo nunca gostou de ler. A irma sempre gostou imenso de ler, eu isto compulsivamente, sempre li, alias sou professora de Historia, nao fazia sentido se nao lesse, nao e? Mas o Bernardo nunca gostou de ler. Mas depois compensou-me sempre com outras coisas: gosta imenso de ver filmes, ainda hoje me telefona de Manchester e pergunta 'sem ai um filme novo para ver?' e os filmes que eu lhe aconselho para ver nao sao propriamente como deve calcular estes filmes idiotas que passam na televisao. E ve filmes interessantes, portanto nao gostando de ler eu tento sempre, e e curioso o Francisco diz, ele ainda e muito novo, eu tento sempre que ele va buscar alguma compensacao...a vida nao se resume a uma bola, nao e? Por muito criativo que ele seja em campo, que e, porque e um jogador criativo, ate podia nao ser, podia estar noutra posicao onde nao fosse tao criativo...ainda assim eu tento isto, porque acho, e isto eu aprendo todos os dias com os meus alunos e digo-lhes todos os dias...acima de tudo...os meus alunos sao da area criativa, voces acima de tudo tem que ser curiosos, senao nao vao ser ninguem na vida. Se nao tiverem a maxima curiosidade para conhecerem mais qualquer coisa, e mais qualquer coisa, senao jornalista, nao conseguem nunca criar nada. Porque e inevitavel, nos temos que ser curiosos, e eu acho que e isso que eu tento sempre: 'Bernardo, nao pares, continua, se curioso'. Nao gostas de ler? Hoje em dia os miudos nao gostam de ler...ve series, ve filmes, ouve musica, e algumas series e alguns filmes sao verdadeiramente bons, sao baseados, tem argumentos validos, etc. O Bernardo nao se resume...agora esta a ver a Guerra dos Tronos e eu tambem vejo, e essas coisas...mas depois nao se resume a isto, o que eu acho que lhe facilita a vida tambem dentro do campo, acho mesmo sinceramente...e ele diz muitas vezes isto: diz que aprendeu a resolver as coisas de outra forma quando a parte fisica nao ajudava, quando percebeu que era mais pequeno que os outros, comecou a pensar no jogo de outra maneira. Mas esta ginastica mental, tem que ser treinada de pequenino e eu acredito mesmo nisso. As vezes eu vou para os meus alunos e penso...e eu tenho alunos de 10o e 11o...e as minhas colegas desesperam e dizem 'sai um berro, sai um asneirao', etc.....nao, nao sao, eles nao tem culpa! Eles nao sao pacotes, incentivados em casa, eles nao tem culpa. Eu...e estimulo, e o Francisco ha-de ter tido esse estimulo em casa, percebe? E eu acho que e isso que falta hoje em dia e se calhar nessas academias o que falta e estimulo intelectual, e ginastica intelectual, que muitas vezes nao tem. Nao chega a ginastica muscular. E o resto?

FF Eu tive hoje uma excelente discussao com a Dra Maria da Luz e com o Dr Ze Gomes...Futuros hoje, porque eu vi agora que eles vao fazer umas obras no Seixal e vao criar um colegio e la em Braga tambem...ha a tendencia cada vez mais e no Reino Unido tambem acontece...querem trazer a escola para o interior da academia.

MJ Como acontece nos Estados Unidos...com o basquetebol.

FF Mas nesse caso ate serem mais novos, em vez de irem para o ensino preparatorio, secundario, ja tem os miudos ali...eu tenho ideias, tenho duvidas..

MJ Eu tambem.

FF Porque acho que pode ser mais, e nao sou inocente hoje em dia sao um negocio, tentar formar jogadores com...tenho ideias duvidas que isso nao seja negativo mesmo...identidades para alem da identidade como f pessoas, que eles falem de outras coisas que nao se

MJ Mas e isso que eu acho...e por exemplo, uma co filho...como deve calcular tenho imenso orgulho n minha filha - agora estamos a falar do meu filho, v e que ele hoje em dia...ele esta ca em Portugal, che sabia, chegou ontem a noite, vai amanha de madrug Open...ver o Joao Sousa. Mas foi com os amigos d E isso e importantissimo. Porque e que e importante resume aos colegas do futebol. Os amigos dele com estao hoje em dia a trabalhar, e que tiveram variadis nao estou sequer a ser elitista nem snob, percebe? E pessoas que nao so do meio de futebol e portanto in se colocarmos a escola ali dentro, tudo se resume a bebedeiras, a ginasios, etc. Nao sei se e por ai que ve verdade e que a maior parte dos jogadores de futebo baixos, o Bernardo nao deixa de ser uma excepcao, elitista Francisco, porque eu as vezes digo isto e ten interpretada...nao estou, eu conhecendo a realidade, realidade muito perto, porque eu acompanhei sempre convivi com todos os pais de todos os outros menin sao meus amigos, pronto. Infelizmente a mae do Ca era uma pessoa com quem eu me dou diariamente. meio um bocadinho diferente da maior parte dos jog dizer isto, nao sei se e valido, porque de facto o Ber a ser curioso, etc, etc, etc. Os que estao taco-a-taco estimulos, portanto eventualmente o seu estudo..

FF Interessa porque..

MJ Eventualmente o seu estudo ha-de justificar qua maior parte destes miudos vem da rua, e verdade...

FF Mas ha varios exemplos de jogadores que nao ve dificeis - o caso do Balotelli que foi adoptado mas d depois por reflectir-se...

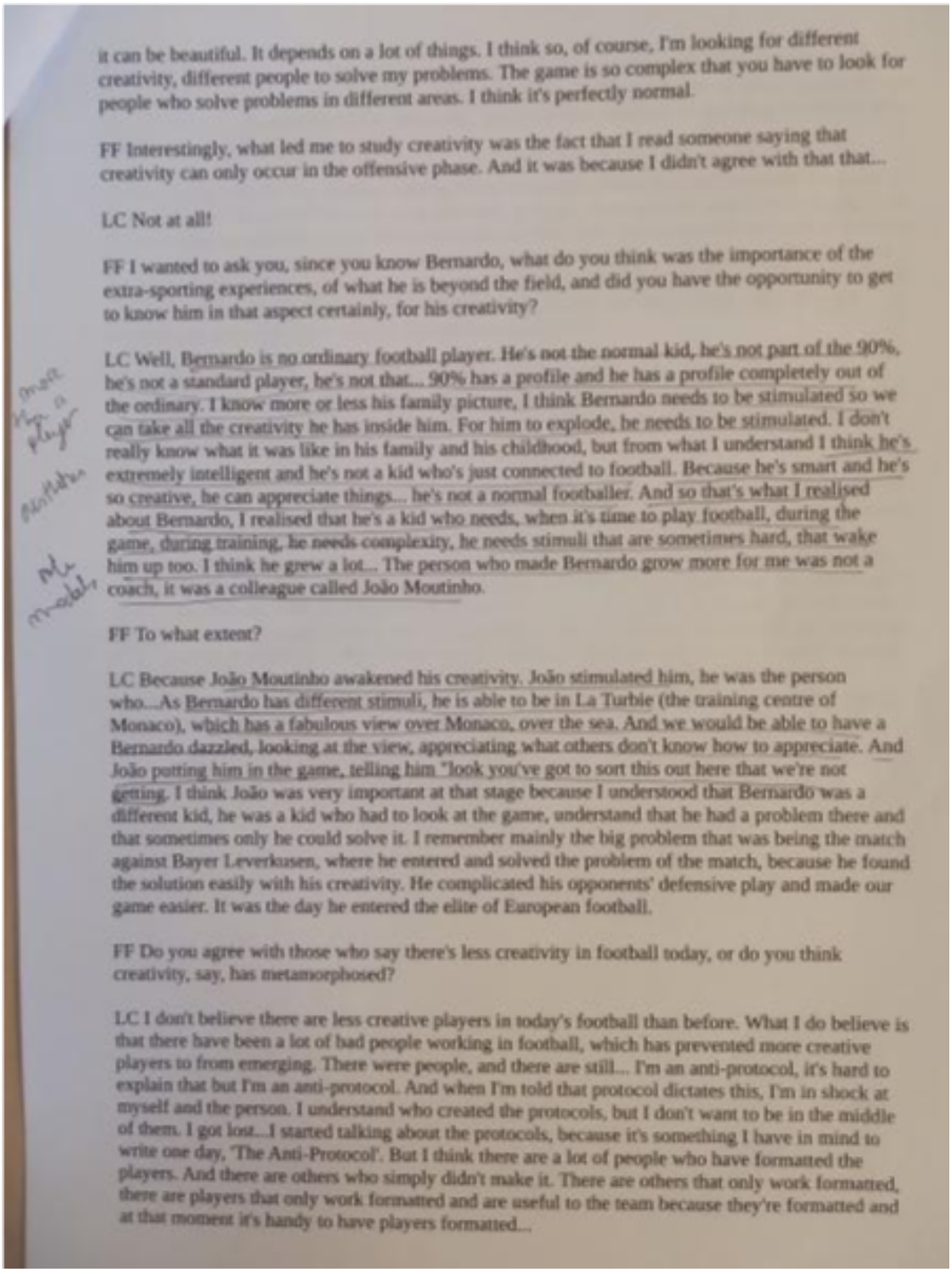
MJ No campo.

FF Nao acho que seja necessariamente...muitas vezes estruturada ate e uma desvantagem, e tida como um

MJ Era isso que eu estava a dizer, nao sei se tao e u

FF Nao e como se diz muitas vezes 'ja teve tudo, tev dizem que e preciso o contrario, para se ser criativo, cada vez mais, hoje em dia, ha mais gente a praticar

Figure 10: Interview transcript (Portuguese) - initial reading with emerging issues noted on the side



it can be beautiful. It depends on a lot of things. I think so, of course, I'm looking for different creativity, different people to solve my problems. The game is so complex that you have to look for people who solve problems in different areas. I think it's perfectly normal.

FF Interestingly, what led me to study creativity was the fact that I read someone saying that creativity can only occur in the offensive phase. And it was because I didn't agree with that that...

LC Not at all!

FF I wanted to ask you, since you know Bernardo, what do you think was the importance of the extra-sporting experiences, of what he is beyond the field, and did you have the opportunity to get to know him in that aspect certainly, for his creativity?

LC Well, Bernardo is no ordinary football player. He's not the normal kid, he's not part of the 90%, he's not a standard player, he's not that... 90% has a profile and he has a profile completely out of the ordinary. I know more or less his family picture, I think Bernardo needs to be stimulated so we can take all the creativity he has inside him. For him to explode, he needs to be stimulated. I don't really know what it was like in his family and his childhood, but from what I understand I think he's extremely intelligent and he's not a kid who's just connected to football. Because he's smart and he's so creative, he can appreciate things... he's not a normal footballer. And so that's what I realised about Bernardo, I realised that he's a kid who needs, when it's time to play football, during the game, during training, he needs complexity, he needs stimuli that are sometimes hard, that wake him up too. I think he grew a lot... The person who made Bernardo grow more for me was not a coach, it was a colleague called João Moutinho.

FF To what extent?

LC Because João Moutinho awakened his creativity. João stimulated him, he was the person who...As Bernardo has different stimuli, he is able to be in La Turbie (the training centre of Monaco), which has a fabulous view over Monaco, over the sea. And we would be able to have a Bernardo dazzled, looking at the view, appreciating what others don't know how to appreciate. And João putting him in the game, telling him "look you've got to sort this out here that we're not getting. I think João was very important at that stage because I understood that Bernardo was a different kid, he was a kid who had to look at the game, understand that he had a problem there and that sometimes only he could solve it. I remember mainly the big problem that was being the match against Bayer Leverkusen, where he entered and solved the problem of the match, because he found the solution easily with his creativity. He complicated his opponents' defensive play and made our game easier. It was the day he entered the elite of European football.

FF Do you agree with those who say there's less creativity in football today, or do you think creativity, say, has metamorphosed?

LC I don't believe there are less creative players in today's football than before. What I do believe is that there have been a lot of bad people working in football, which has prevented more creative players to from emerging. There were people, and there are still... I'm an anti-protocol, it's hard to explain that but I'm an anti-protocol. And when I'm told that protocol dictates this, I'm in shock at myself and the person. I understand who created the protocols, but I don't want to be in the middle of them. I got lost...I started talking about the protocols, because it's something I have in mind to write one day, 'The Anti-Protocol'. But I think there are a lot of people who have formatted the players. And there are others who simply didn't make it. There are others that only work formatted, there are players that only work formatted and are useful to the team because they're formatted and at that moment it's handy to have players formatted...

Figure 11: Example of translated interview with preliminary coding