

**Coaching with Latour: An ontological manifesto
for the sociomateriality of sport**

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Declaration

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

Signed,

Jordan Maclean

For Bruno Latour



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Contents

<i>Table of figures</i>	i
<i>List of abbreviations</i>	ii
<i>Abstract</i>	iii
Chapter one The enigma of coaching in community sport	1
<i>Community sport</i>	2
<i>Problem and significance</i>	4
<i>Aim, objectives and research questions</i>	5
<i>Structure of the thesis</i>	7
Chapter two Literature review: Reassembling coaching from its practices	10
<i>Section one: Three main areas of coaching research</i>	10
<i>Section two: reconceptualising coaching as a sociomaterial practice</i>	33
<i>Chapter summary</i>	40
Chapter three Latourian actor-network theory methodology	41
<i>Actor-network theory</i>	41
<i>A relationist ontology</i>	42
<i>The social is kept flat</i>	44
<i>Latourian actor-network theory</i>	46
<i>Chapter summary</i>	56
Chapter four An actor-network theory ethnography	57
<i>Actor-network theory ethnography</i>	57
<i>Entering the field</i>	62
<i>Chapter summary</i>	74
Chapter five A cartography of coaching	75
<i>Move one (actors): moving from The Game towards a field of practice</i>	78
<i>Move two (network set-ups): delegation</i>	88
<i>Move three (trials of strength): quasi-object</i>	102
<i>Move four (translate the trails): interruptions</i>	110
<i>Move five (articulated propositions): manufacturing</i>	115
<i>Chapter summary</i>	122

Chapter six A relationist field of practice	123
<i>Proposition one: nonhumans are ‘matters of concern’</i>	123
<i>Proposition two: Coaching is ontologically different from The Game</i>	124
<i>Proposition three: Materials give shape to, and materiality shapes, practices</i>	128
<i>Proposition four: Intervening with alliances</i>	131
<i>Proposition five: a ‘new’ sociomaterial competence</i>	134
<i>Chapter summary</i>	137
Chapter seven Becoming an object-oriented coach	138
<i>Object-oriented coaching</i>	138
<i>Neither coach nor athlete-centred</i>	140
<i>Translating the cartography of coaching into the territory of practice</i>	142
<i>Implications for practice</i>	147
<i>Chapter summary</i>	151
Chapter eight An ontological manifesto for the sociomateriality of sport	152
<i>Significant contribution of thesis</i>	152
<i>The sociomateriality of sport</i>	154
<i>What makes a good ANT account?</i>	158
<i>Strengths and limitations</i>	159
<i>Growing out of Latour</i>	161
<i>Recommendations for future research</i>	163
Postscript Reflections on coaching with Latour	166
<i>ANT as a methodology</i>	166
<i>An imagined conversation with the coaches at the start of the thesis</i>	171
<i>Glossary</i>	177
<i>References</i>	182
<i>Appendices</i>	220

Table of figures

Figure 1. <i>Nomination sampling strategy for identifying two community football clubs and coaches</i>	59
Figure 2. <i>A selection of some sketches I made in the field of the coaches' practices</i>	67
Figure 3. <i>Generating anecdotes: On the left is a pen and paper method, and on the right, an electronic version</i>	71
Figure 4. <i>The five moving parts of coaching: five moves in which each part is considered as important as the others and each feed back into itself and into the other four. Manufacturing (fifth part) is situated in the middle as it is seen as a central knot tying the four other moves</i>	77
Figure 5. <i>The Field of Play</i>	78
Figure 6. <i>Field of practice: Notice the double yellow / white lines (both clubs had either or), and the multiple seven-a-side goals around the perimeter.</i>	84
Figure 7. <i>Mapping practices: A cartography of white lines in the place of cones of George (top) and Paul's (bottom) coaching practices</i>	98
Figure 8. <i>Who's who? A ball crossed in towards attackers and defenders</i>	100
Figure 9. <i>Field of practices. Each individual field is a reconstruction of some of Paul and George's practices. Particular attention is given to cones depicted as white lines, and the movement of the quasi-object depicted as blue and red lines.</i>	144

List of abbreviations

AIME	An Inquiry into Modes of Existence
AITA	Actors, Irreduction, Translation, Alliances
ANT	Actor-network theory
CLA	Constraints Led Approach
CPD	Continuous Professional Development
DCMS	Department of Culture, Media and Sport
ESRC	Economic and Social Research Council
FIFA	Federation Internationale de Football Association
GSP	Game Sense pedagogy
GUEP	General University Ethics Panel
IFAB	International Football Association Board
OFSTED	Office for Standards in Education, Children's Services and Skills
OS	Open Society
PE	Physical Education
PJDM	Professional Judgement and Decision Making
ProPEL	Professional Practice and Professional Leadership
SFA	Scottish Football Association
SGSSS	Scottish Graduate School of Social Sciences
STORRE	University of Stirling's Online Research
TGFU	Teaching Games for Understanding
TRF	Thyrotropin Releasing Factor
UEFA	Union of European Football Association

Abstract

Something that I witnessed. Something that has led to fractured and isolated debates in coaching research. And something that might benefit from being looked at in a different way because very little is known about the ontological dimension of what things *do* in coaching practices. The aim of this thesis is to develop a relationist ontology of coaching as its own field of practice. The methodology draws inspiration from Latourian actor-network theory (ANT). ANT is a relationist ontology that examines the associations between humans and nonhumans. Five Latourian ANT concepts informed the inquiry into sport coaching: *actors*, who can be human and nonhuman; *networks*, which are how actors become assembled; *trials of strength*, which define what actors do; *translation*, which describes how actors relate to each other; and *articulated propositions*, which grant others the ability to speak about an assembled actor-network. An ANT ethnography forms the basis of the fieldwork which consists of observations in two community football clubs over a season. Fieldnotes are the main data gathering method in which I ‘followed the actors themselves’ (Latour 2005a). Actors become relevant as they *acted* in ways that empirically warranted attention. A sociomaterial analysis is set out which generates ‘anecdotes’ (Adams and Thompson 2016) that are short stories of how social and material relations come together in practices. Each anecdote forms a *part* in the cartography of coaching which is ordered as follows: (1) moving from The Game towards a field of practice, (2) delegation, (3) quasi-object, (4) interruptions, and (5) manufacturing. Each part is accompanied with a *move* inspired by Latourian ANT. The significant contribution of this thesis is coaching is a relationist field of practice resting upon five propositions: first, nonhumans are ‘matters of concern’ (Latour 2004a); second, coaching is ontologically different from The Game; third, materials give shape to, and materiality shapes, practices; fourth, coaches intervene with alliances; and fifth, a new sociomaterial competence is necessitated. A more “truthful” territory is articulated so that other coaches can become more object-oriented when translating the cartography into their own practices. An ontological manifesto for the sociomateriality of sport paves the way for a big picture outlook for how academics and practitioners conceptualise, understand, describe, and improve their own coaching.

Chapter one | The enigma of coaching in community sport

Another holiday camp season and the pitches were full of children and young people. Some were registered, while others walked on the day of camp. But we, the coaches, were prepared to deal with this as Camp Football briefed us prior to the Monday morning registration. On this occasion, Camp Football had prepared a new information booklet giving some ideas on the types of practices we could do throughout the week of camp. They did not go through the practices but simply gave us the booklet that had everything that we needed to coach; pages upon pages of different practices filled with cones, balls, players, and arrowed lines, all within a diagram of an eleven-a-side pitch. Each of the practices were given a codename accompanied with the rules of play. On the first day, we marked our own area on the pitch, and this became our zone for the rest of the week. For each day, I had a session plan and although some days were more detailed than others, it gave me a map for the different types of practices I would do. But I recall one day of camp when I looked over at the youth players and noticed that they were only playing a *game*. Indeed, on other occasions all of what I could see were games! Or another popular practice was penalty shootouts. Perhaps these ‘coaches’ thought their job description was to only facilitate the participation of sport? This became a problem for me as some of the children in my group noticed the others and asked me several times, “When are *we* going to play games?” Since then, I have begun to question “what *is* coaching in community sport settings?”

What would I say to those coaches whose practices only appeared to facilitate the participation of sport? To merely tell them that they are not coaching would not be enough. Who am I to make such a bold claim! And to question them on what they are doing would perhaps yield no reply. For, as Stengers (2005, 2) says, ‘there is no point in asking him “what is more important?” for “he does not know”’. I needed to stand on firmer ground. But I did not know where to look then. All I knew was that there is more to coaching than facilitating the participation of sport. This experience has inspired this research in which my aim is to slow down and unfold the enigma of coaching.

Community sport

Community sport has a crucial social function that intersects with a broad range of government policy areas, including education, health, and welfare. In Scotland, clubs and community sport is the most highly invested area in accordance with sportscotland's 2019/21 Business Plan, followed by schools and education, and performance sport (sportscotland 2019, 19). Outside of school, sport coaches are extremely important figures for promoting the health and wellbeing of children and young people. Indeed, one of the major outcomes of the Department of Culture, Media and Sport's most recent strategy for sport, *Sporting Future: A New Strategy for an Active Nation*, was 'social and community development' (DCMS 2015). This demonstrates the significance of community sport at a national level. According to Green (2006) the prominence of sport and community in policy mirrors the rhetoric of developing active citizens. Green (2006) distinguished between two policy discourses in the United Kingdom (UK) since the election of New Labour in 1997 which has been split between an 'active citizen' agenda which encourages participation in sport and a 'no compromise' agenda prized on performance and podiums. Community sport can be positioned within the active citizenship role of the UK Government, responsible for the delivery of sport led community programmes across the UK in encouraging children and young people to participate in sport (DCMS 2015). Coinciding with a responsibility for children and youth participation, community sport has also come together with social welfare strategies related to health and social delinquency. For example, the epidemiology literature suggests that engagement in physical activity during childhood can lead to a reduced risk of obesity in adulthood and promotes lifelong participation in sporting activities (Aburto et al. 2011). It is claimed that participation in sport can also help to tackle anti-social behaviour, reduce crime rates, provide rehabilitation for offenders, and enhance social cohesion (Andrews and Andrews 2003). Furthermore, sport is claimed to promote equality and facilitate inclusive opportunities, enabling participation in local communities for every individual irrespective of age, gender, ability, culture, or ethnicity (DCMS 2015).

Nevertheless, the 'romantic' sense of community (Alder et al. 2008) has come under challenge with the neoliberal rationality of successive UK government policies. Neoliberal policies in sport place more emphasis on 'individual responsibility and self-esteem' as opposed to state intervention (Guilianotti 2016, 118). In an era of austerity introduced first under the coalition

Conservative government, community sport has now come under a ‘managerialist approach’ (O’Gorman et al. 2018). This has seen volunteer coaches subject to enhanced levels of accountability and intense evaluation, often with little reward (Ives et al. 2019). Accountability measures have been a signature policy instrument in education since the 1970s and have intensified with the turn to enhanced neoliberalism and the rise of conservative governance (Lather 2014; Watson 2018). Indeed, this has been reflected in the wider professionalisation and modernisation agenda in sport over the past two decades which has prioritised ‘increasingly market-orientated neoliberal policy making’ (Gale et al. 2019, 28). According to Day and Carpenter (2015) the introduction of the National Coaching Foundation in 1989 led to the ‘the formalization of sport science’ which triggered the subsequent professionalisation of sport coaching (UK Sport 2001). This has coincided with the establishment of coach development structures across Europe as well as with the introduction of National Lottery funding for elite sport (Department of National Heritage 1995; Buhre 2009). Consequently, strong ties with volunteerism in the UK has been considered a barrier towards achieving professionalised status. Other countries, such as France, Czech Republic, Poland, Germany, and Brazil, have mandated coaching as a ‘regulated profession’ (Duffy et al. 2010; Millested et al. 2019). Professionalism threatens to reposition or worse ostracise the volunteer coach from the ‘heart of coaching’ (Taylor and Garratt 2010). Taylor and Garratt (2012) take an overtly critical stance on the professionalisation of sport coaching in the UK as a ‘deliberate attack’ on volunteer coaches, and they appeal for a more sympathetic and inclusive approach.

With increased accountability, the education of volunteer coaches might seem to be of great importance. Certainly, this has been reflected in the number of university courses that now offer vocational and degree programmes in sport over the past two decades (Lara-Bercial et al. 2016). However, volunteer coaches often spend very little time in formal training because most of their learning is serendipitous (Abraham et al. 2009). Yet, and perhaps more worryingly, Cronin and Lowes (2016) argue that volunteer coaches are not prepared to deal with the challenging and complex coaching environments that they find themselves in. Indeed, Hayton (2017) found that student volunteer coaches often experienced a great amount of emotional labour when coaching hard-to-reach groups of children and young people. Perhaps there is a need to ‘slow sport down’ from the fast-paced neoliberal performativity that has now manifested itself in community sport

work (Roderick et al. 2017). By focusing on the practices of community sport, this thesis aims to provide essential insight into the crucial work that volunteer coaches do, in order so that they can be prepared to do it better.

Problem and significance

One of the most pressing problems in the state of play is developing a conceptualisation of coaching that coaches can put into practice. Although there are several conceptualisations that attempt to bridge or close the gap between theory and practice, ‘coaching’ remains an ambiguous term (Cushion and Lyle 2016). Consequently, Abraham and Collins (2011) argue that coaching research needs to be culled to prevent a further deluge of conceptualisations. However, Jones et al. (2016) disagreed and instead argued for a consensual epistemology of coaching, where there is agreement about the knowledges needed for coaching. But such a consensus does not yet exist because our knowledge of coaching has been informed from differing epistemologies or ‘theories of knowledge’ which has resulted in a fragmented field of discrete areas of research that each claim to hold ‘genuine knowledge’ of coaching (Benton and Craib 2001). This has led to fractured and isolated debates (e.g., North 2013, 2017) which, rather than moving the field forward, might end up ‘running out of steam’ (Latour 2004a). That is because if the name of the game is *critique*, then one’s intention is always to divide and distinguish from another. This thesis acknowledges the many ways to conceptualise coaching but argues that coaching does not have a map that is “truthful” to the territory of its practices and, thus, requires reassembling.

Previous research has been preoccupied with what St Pierre (2011) calls a ‘conventional humanist qualitative inquiry’ in which agency has been primarily attributed with individuals, such as coaches and athletes. In other words, our understanding of coaching has only ever been considered from the points of view of coaches and athletes and other key stakeholders, including parents and governing bodies of sport. But what if there was a different starting point for an inquiry into sport coaching that does not privilege coaches or athletes. Some have called this decisive break with humanism as ‘*posthuman*’ because it involves displacing the human from the centre of the inquiry, where agency instead becomes ‘distributed’ across both humans *and* nonhumans (Bennett 2010). For Bradiotti (2013, 167) once we leave humanism behind ‘the subject becomes relational in a complex manner that connects it with multiple others’. However, the subject holds prominence

over objects in coaching research. In other words, the social has been privileged above materials in previous conceptualisations of coaching practice. Materials have most often been downplayed or completely ignored as either subordinate (Waltz 2006) or an appendage (Fenwick 2012) to the actions of coaches and athletes. And even when materials do confront coaching researchers they are often treated with scepticism. For example, in a recent survey, North et al. (2020, 9, emphasis added) were confounded to find that coaches highest rated problem was with their facilities or, as they put it, the '*basics* of sporting provision'. While they appear to associate 'basic' with something inferior to other more common problems, such as 'player-coach interaction' which was rated second highest, the views about who and what has importance in coaching appears to be entrenched in current ways of thinking. In contrast with North et al.'s (2020) plea for the 'voice of the coach' to be foregrounded in policy and practice, this thesis moves away from the 'gravitational pull of humanism' (Lather 2015, 100) towards finding a *voice* for materials and materiality. Arguing throughout that without this ontological shift, there is a risk that our knowledge of coaching will remain partial at best or misguided at worst.

What if a conceptualisation of coaching was developed on ontological, rather than epistemological, grounds? Ontology is the study or theory of being taken from the Greek root *ont-*, from *ontos* or 'being' (Crane 2017). Coaching might benefit from *being* looked at in a different way given that very little is known about the ontological dimension of what things *do* in practices. There has only ever been provided what Latour (2007) calls a 'thin description' of practice, as it does not explain anything about the gathering of human *and* nonhumans. But recognising that coaching is a 'more-than-human' practice (Lupton 2019a) means that we must also depart from previous conceptualisations that are bound up with the human. This thesis sets out to address the lack of conceptual consensus by developing a conceptualisation of coaching that is more faithful to practices. Acknowledging both social and material relations may also have the potential to bring about greater application between research/knowledge and practice.

Aim, objectives, and research questions

The aim of this thesis is to develop a relationist ontology of coaching as its own field of practice. By this I mean that any conceptualisation of coaching is dependent upon the relations of both humans and nonhumans that make up practices. To do so, I draw inspiration from Latourian

actor-network theory (ANT). ANT is a sociomaterial approach that focuses on the ‘local, material, mundane sites’ of practices (Latour 1999a, 309), primarily through ethnographic observations as a standalone method (i.e., Latour 1987, 2002a). ANT is suitable for addressing the oversight of *things* in coaching research because it does not distinguish between humans and nonhumans. According to Law (1992, 3), ‘the task of sociology is to characterise these networks in their heterogeneity’. By doing so, ANT recognises that coaching does not explain anything and rather needs to be explained (Alcadipani and Hassard 2010). ANT provides a ‘thick description’ of practices which focuses on the material definition of matter that is necessary for something to function (Latour 2007). Given that this is one of the first ANT studies in sport coaching, I have primarily drawn upon literature across sociomaterial studies in education (Fenwick and Edwards 2010; Mulcahy 2012; Sørensen 2009; Tummons 2019; Tummons and Beach 2020), organisational studies (Gherardi 2012; Leonardi 2010; Orlikowski 2007) and science and technology studies (Callon 1986; Latour 1992; Law 1987). These give persuasive insight for how ‘matter comes to matter’ (Barad 2003). This thesis sets out an ‘ontological manifesto’ (Callon and Latour 1992) that is precisely concerned with how ‘matter comes to matter’ (Barad 2003) in community sport settings. The insights of this thesis have the potential to pave the way for a new sociology of coaching and practice, inform providers of coaching education as well as support the professional learning and practices of coaches.

The research questions are methodologically driven by ANT and its links with sociomateriality which emphasises social and material relations in practices. This has theoretical importance for coaching research given that it tends to privilege the social and, with some irony, overlook materials and materiality in practices. To this end, an overarching research question and five subsidiary questions are identified.

My primary research question is:

How can sport coaching be reconceptualised as a sociomaterial practice?

Subsidiary questions:

- What human and nonhuman actors make practices possible?
- How is coaching ontologically different from The Game?

- How do materials give shape to, and in what ways does materiality shape, practices?
- How can intervening be seen as a relational accomplishment?
- How can coaches develop a ‘new’ sociomaterial competence?

To achieve the aim and to address the research questions, there are three objectives:

1. To review previous conceptualisations of coaching and consider how literature around sociomateriality can be brought to bear in reassembling coaching from its practices.
2. To conduct an ANT ethnography of two volunteer coaches over a season in two community football clubs in Scotland, critically assessing how they attend to materials and attune to materiality.
3. To produce implications for practice, ensuring that my work has impact beyond academia.

Structure of the thesis

The thesis is structured into eight chapters and a postscript. Chapter two is divided in two sections. The first section reviews three discrete areas of coaching research, for how they have come to influence conceptualisations of coaching: coach learning, coaching process and practice, and coaching pedagogy. Although each contributes towards our knowledge of coaching, they appear to privilege humans, such as coaches and athletes, and give insufficient attention to the ontological dimension of what things *do* in practices. Consequently, I introduce sociomateriality in the second section as a way for reassembling coaching from its practices.

Chapter three sets out the methodology of Latourian ANT. After introducing ANT, I give insight into its main ontological assumptions. Then, I present an overview of Latourian ANT from five concepts which are the analytical *moves* in the cartography of coaching in Chapter five. The five concepts, actor, network, trials of strength, translation, and articulated propositions, are situated in relation with the key works of Latour over the course of his life’s work.

Chapter four describes the research design of an ANT ethnography. I detail the research processes starting with the preparation of securing ethical approval and negotiating access for fieldwork. I then give insight into the data gathering methods, including video recordings and fieldnotes.

Moving from the field back to my desk, I go on to detail the sociomaterial analysis which inspired the cartography of coaching.

Chapter five presents the five ‘moving parts’ of the cartography of coaching inspired by Latourian ANT. In the first part, coaches move from The Game towards a field of practice. To help make this move, I draw upon the ANT concept *actor*. The second part considers how authority is delegated to each of the actors that become enrolled into the field of practice. To make this move, *network setups* are studied. The third part of coaching pays close attention to the problems that emerge in practices. To make this move, actors undergo a *trial of strength* staged by coaches. The fourth part of coaching considers interruptions, particularly when coaches are called into action. To make this move, I examine how coaches *translate* the trails of an interrupted passage to the start of the next passage. The fifth part summarises the previous four and argues that coaching is ‘manufactured’ because it is at once constructed and at the same time fabricated. To make this move, coaches *articulate propositions* to coach well.

Chapter six argues that coaching is a relationist field of practice resting upon five propositions: nonhuman actors make coaching practices possible in the way that they are ‘matters of concern’ (Latour 2004a); coaching is a practice that is ontologically from The Game; materials give shape to, and materiality shapes, practices; coaches intervene with alliances of human and nonhumans; and a ‘new’ sociomaterial competence is necessitated.

Chapter seven attempts to overcome the ambiguity of the term ‘coaching’ by helping coaches to become more ‘object-oriented’ in their practices. To do so, I translate the cartography of coaching in Chapter five into the territory of some of the coaches’ practices in this thesis. An alternative territory of practices is articulated that is arguably more “truthful” to the cartography of coaching. There are three implications for practice: (1) developing coaches as cartographers; (2) induction to the seduction of things; and (3) greater support/education on the processes of intervening with alliances.

Chapter eight concludes the thesis with an ontological manifesto for the sociomateriality of sport. The significant contribution of the thesis is first stated, followed by the sociomateriality of sport,

what makes a good ANT account, strengths, and limitations of the thesis, ‘growing out of Latour’ and recommendations for future research.

Finally, a postscript provides some reflections of my endeavours on coaching with Latour. I reflect on the wondrousness of conducting an ANT study, its challenges and criticisms of writing, and its ability to spark memorable moments. Finally, I return to the opening anecdote at the start of the thesis and imagine what the conversation might have been like if I knew then what I know now.

Chapter two | Literature review: Reassembling coaching from its practices

Inspired by the enigma, ‘what *is* coaching in community sport settings’, in Chapter one, section one sets out a review of three main areas to understand how coaching has been conceptualised. I start with coach learning to understand how coaches learn to coach and the knowledges needed for coaching. This then led me to examine how coaching processes and practices have already been assembled (or not). Then, I consider what coaching pedagogy tells us about what coaches *do* in practices. Although each have given essential insights, they have overlooked the ontological dimension of what things *do* in practices. Consequently, in the second section I draw on literature around sociomateriality for considering how these ideas can be brought to bear in reassembling coaching from its practices.

Section one: Three main areas of coaching research

I have deliberately taken a broad literature review which encompasses three areas of coaching research because of the lack of conceptual consensus about what *is* coaching. Indeed, each is its own discrete area of research which means that my understanding of coaching *must be* considered across all three so that the enigma can be addressed.

Coach learning

Coaches’ learning has been of interest over the past two decades where several theoretical conceptualisations of learning have emerged (Cushion et al. 2010; Trudel et al. 2020; Walker et al. 2018). For example, Nelson et al. (2006) categorised learning as three distinct categories: formal, nonformal and informal learning. Another variation was offered by Werthner and Trudel (2006) which consisted of mediated, unmediated, and internal situations. The use of ‘situations’ recognises the specific settings in which learning takes place (Trudel et al. 2013). The commonality between these two typologies is that they share a compartmentalised view which collapses learning into general categories. Oldridge et al. (2016) and Stodter and Cushion (2016) argue for moving beyond the separation of learning situations, where learning situations incorporate elements of both formality and informality (Hodkinson et al. 2003). This is echoed by Mallett et al. (2009) who insist that the contribution of all learning should be acknowledged and viewed along a continuum between informal and formal.

Informal ← → *Formal Learning*

I move along the continuum from informal to formal learning to understand what coach learning research tells us about how coaches learn to coach, and the knowledges needed for coaching. Informal learning has been reported as coaches 'preferred' source of learning (Erickson et al. 2008; Lemyre et al. 2007) which might be because coaches less time in formal settings (Gilbert, Gallimore and Trudel 2009). Early studies in this area provided more generalisable accounts based on quantitative analyses that distinguished between the frequency of coaches' engagement in informal and formal learning (i.e., Wright et al. 2007). However, Cushion et al. (2010) argue that the construct 'learning' tends to be treated unproblematically because the nuances within each learning situation are not clearly defined nor delineated. Mallett et al. (2009, 329-331) also highlight the difficulty of providing a 'consensual terminology' of learning due to what they call the 'languaging' of the 'subtleties and nuances of coach learning':

At one end of the continuum is the structured, mentored experience, which is characterised by direction, feedback and a measure of evaluation. At the other end of the continuum is the unguided or unmediated situation from which valuable learning may be acquired, but which lacks quality assurance or the development of understanding.

The lack of quality assurance and development of understanding in informal learning has also been identified as a problem in several more recent qualitative and mixed methods studies. Notably, Koh et al. (2018) report a high prevalence of 'random browsing' of elite sport coaches' use of the internet, as they unreflexively adopted coaching practices from unreliable sources. These findings are consistent with Stoszkowski and Collins' (2016) study where 73% of coaches reported an 'uncritical application' of coaching knowledge in practices. This 'working knowledge' (Lyle 2007a) refers to how coaches form patterns when making decisions in practice but is problematic given that the content might be inappropriate and potentially harmful (Taylor et al. 2016). These insights are particularly concerning for volunteer coaches associated with community sport in the way that they often receive little formal education and have very few prerequisites to practice. To better support coaches for coaching in participation sport, Lyle (2007b) argues for more structure that can act as a guiding theoretical framework to support their practices. Otherwise,

volunteer coaches will be left with a lack of evidence-based guidance for the decisions they make in practices. Although flexible and inexpensive as coaches can 'control what they would like to learn and the pace of learning' (Koh et al. 2018), the issues surrounding informal learning has been recognised by national governing bodies of sport with the introduction of formal coach education programmes.

Formal learning is defined as learning leading to a qualification earned through participation in a coach education programme, which coaches undertake to become accredited for the sport that they coach. Coach accreditation is generally administered by the national governing body of sport delivered under the provision or mediation of coach developers (Mallett et al. 2009). According to Abraham and Collins (1998) there are two methods of coach education in the UK: an experiential approach and the gold standard approach. In the experiential approach, coaches tend to use their own judgement based on informally gained knowledge in coaching situations. However, coach education programmes have largely prioritised coaches' professional knowledge, and this is broadly consistent with what Abraham and Collins (1998) call the gold standard approach. The gold standard approach breaks down coaches' professional knowledge into specific components, such as technique and tactics, and coaches are taught the gold standard of each component that is determined by the governing bodies. Coaching knowledge becomes of significance and has generally been categorised as professional, which includes sport specific and pedagogical knowledge; interpersonal knowledge, which refers to coach-athlete interactions; and intrapersonal knowledge, which relates to self-reflection (Côté and Gilbert 2009, 310-311). Côté and Gilbert (2009, 316) propose that all three knowledges must be present for coaches to be able to demonstrate coaching effectiveness.

With an increased recognition of coach accreditation in the UK, subsequent analyses attempt to detail the experiences of coaches in coach education programmes. For example, Chesterfield et al. (2010), who borrowed from Goffman's (1969) concept of 'impression management', argue that elite football coaches perform a 'front' that complies with the certification criteria as a way just to pass the course. After completion, however, the coaches reverted to coaching based on their own experiential learning. In another study, Nelson et al. (2013) identified several 'coach education ills': namely, the top-down design, which refers to the course structure and content;

and provision, in terms of how courses are delivered. A key recommendation from their analysis is for coaches to have a more active role in coach education programmes so that the content is ‘personally relevant and practically usable’ (Nelson et al. 2013, 215). However, Piggott (2012) argues that coaches are often ‘passive recipients’ and have limited agency because learning is a transmissive process taught by coach developers. Although coach education programmes recognise different coaching contexts, such as participation and performance settings, provision has largely been ‘one size fits all’ (Piggott 2015), and this is more consistent with the gold standard approach. Alternatively, Stoszowski et al. (2017ab) encourage provision to be ‘facilitated’ by coach developers, and such a change has been supported by others (Ciampolini et al. 2019; Jones et al. 2011; Roberts and Potrac 2014; Roberts and Ryrie 2014; Trudel et al. 2013). For example, Jones, Morgan and Harris’ (2011) social learning community of practice revealed that student-coaches integrated coaching theory into their practices. Roberts and Ryrie’s (2014) Socratic case method approach indicated that student-coaches were better prepared to deal with real world coaching problems when they took charge of their own learning. Although such insights give support for a more experientially based and research informed education, provision in coach education programmes remains largely informed by the gold standard approach.

To enact reform in coach education programmes, Piggott (2015) proposes a ‘normative’ model based on Popper’s critical rationalist notion of an Open Society (OS). According to Piggott (2015, 290), an ‘OS is Popper’s attempt to delineate the optimal social conditions for the growth of knowledge’. Becoming more *open* is made possible by encouraging a less ‘dogmatic’ or top-down structure of coach education programmes. Another suggestion is for provision to promote ‘individualism, fallibilism, scepticism and experimentation’ (Piggott 2015, 293). However, Nelson et al. (2014, 517-518) argue that a ‘truly person-centred’ approach, which prioritises the goals of the learner, runs contrary to the ‘dominant ideologies of coaching and coach education’ and would require a ‘seismic shift’ in the structure and provision of current programmes. Indeed, Chapman et al.’s (2020) recent call for more ‘liberal pedagogies’ in coach education programmes suggests that such a *shift* or reform has yet to make waves.

Alternatively, others have prioritised the professional learning of coaches from their practices. The sentiment of learning from practice has also been shared by Phelan and Griffiths (2019) who

reconceptualised professional learning as ‘knowing-in-practice’. This marks an important change from previous compartmentalised views of learning which are decontextualised from practices. Light’s (2011) constructivist view of learning finds a middle ground between Lave and Wenger’s (1991) situated learning and the sociology of Bourdieu. Despite their theoretical differences, Light (2011, 379) argues that a point of consistency lies in their emphasis on the corporeal dimensions of learning, which moves beyond the view that learning is solely located ‘in the mind’. These studies point to the methodological importance of conceptualising learning through practices, and this has also been a feature of nonformal learning in conferences, workshops, seminars, and coaching clinics. Nonformal learning shares many similar characteristics with that of coach education programmes but differs in that it does not include assessments or culminate in certification. Stoszkowski and Collins (2014) identified four benefits of professional learning in non-formal settings: (1) coaches might develop a better understanding of coaching practice; (2) a more realistic correspondence to the environment that coaches operate within; (3) self-reflection on coaching practices; and (4) developing relationships through peer mentoring.

Speaking to the first and third benefits listed above, Falcão et al. (2017) implemented a nonformal coach development training programme for twelve youth basketball coaches from schools within low socio-economic communities. The workshop introduced principles of humanistic coaching, such as athlete autonomy and individualising the coaching process, later integrated within the coaches’ practices. The change in coaching approach is evidenced by how the coaches included athletes in decision-making processes through prompting questions and encouraging feedback from players. When the principles of humanistic coaching were embedded into coaches’ practices, increases were noted in interpersonal interactions, autonomy, communication and motivation, and developmental outcomes, such as promoting the life skills of players.

Speaking to the second and fourth benefits, Stodter and Cushion (2017) explored the professional learning among sport coaches undertaking continuous professional development (CPD) through a longitudinal research design using video observations followed by stimulated recall of their practices. They reframed learning by moving towards a more contextualised account that is ‘empirically grounded ... linked to practice’. With the focus on coaches in practices there is a more realistic correspondence to the environment that coaches operate within. Stodter and

Cushion (2017) argue that knowledge and practice are closely intertwined within a double-loop filtering process. The first loop is an individual level ‘filer’ which refers to coaches’ ‘existing beliefs, knowledge and coaching practice’. The second loop is a contextual filter that coaches negotiate how a new concept or knowledge fits in relation to their own coaching context. Stimulated recall of the coaches’ practices revealed that they undertook a process of matching, mismatching, or fitting in new knowledge depending on their biography and context.

Conclusion: Learning beyond the coach

Despite moving beyond the compartmentalisation of informal and formal towards a greater focus on practices, there continues to be an underlying assumption of privileging the learning of coaches. In the studies reviewed above, knowledge about coaching remains limited to the recall of coaches (Chesterfield et al. 2010; Côté and Gilbert 2009; Koh et al. 2018), and this has been perpetuated even with a methodological emphasis on practices (Phelan and Griffiths 2019; Stodter and Cushion 2017). The heterogeneous composition of practices is substituted by the word ‘context’ (Stodter and Cushion 2016). But who and what really lies within this context? And how might it change the way that we come to conceptualise learning so that it is not seen as solely the achievement of coaches? Such questions might help to address the enigma of what is coaching in community sport settings. However, such questions cannot be addressed by coach learning research alone because it has not consulted coaching process and practice research for how practices are assembled (or not).

Coaching process and practice research

The second area of literature aims to understand how coaching practices are assembled (or not). While coaching process research prioritises the ‘cognitive’ decision-making of coaches represented in models (Abraham and Collins 2011; Cooper and Allen 2018; Lyle and Cushion 2017), coaching practice research draws inspiration from sociological theory in which coaching is considered a ‘social practice’ (Denison 2007; Jones and Corsby 2017; Jones and Hemmestad 2019; Jones and Wallace 2006).

Coaching process

The coaching process was initially influenced by the systematic empiricism of positivism dedicated to a 'coaching science' (Jones 2007) which attempted to make systematic generalisations concerning behaviours that are reflective of practices (Cushion et al. 2006). Behavioural approaches emphasised 'observing, collecting, listing, and classifying natural phenomena' (Chia 2003). However, such approaches have since been criticised for reducing coaching to oversimplified and episodic accounts (Cushion et al. 2007). In response to these deficiencies, 'psychological scientism' offers an alternative lens for producing 'objective, value free, and systematic research findings' (North 2013a). In this section, I continue to unfold the enigma of what coaching *is* by reviewing its processes.

According to Lyle and Cushion (2017) there are four key components of the coaching process: (1) planning, (2) delivery, (3) management and (4) strategic coordination. Planning refers to an intervention programme which consists of performance related activities, including training and competition preparation. Delivery is sub divided into direct interventions and intervention support. Direct interventions are aspects of coaches' behaviours, such as technical instruction, feedback, and demonstrations. Intervention support is how coaches prepare and support direct interventions in practices. Management refers to the handling of resources, facilities, equipment, and finances. According to Lyle and Cushion (2017, 91-92) strategic coordination is 'the distinguishing feature of the coach's role', but the greater demands of expertise needed to oversee the coaching process means it is more closely related to the professional coach. With that being said, I argue that coaching process research focuses primarily on the planning and strategic coordination of Lyle and Cushion's (2017) four key components.

In relation to planning, coaching process models draw inspiration from a combination of quantitative, qualitative, and mixed method research designs. Modelling in coaching is like what Chia (2003, 13) calls 'representationalist views of language' where cognition involves the ability to 'accurately map phenomena and events in the external world in order to establish their causal relationships in a rationalist system of explanation'. Several coaching models have been produced over the last two decades typically with the goal of offering a more structured guide of how to coach (Abraham et al. 2006; Abraham and Collins 2011; Côté et al. 1995; Lyle 2002). There are

two main ways of classifying coaching models: models *of* coaching which are spoken from the first-person experiences of coaches, and models *for* coaching which are spoken through the third-person narration of researchers (Abraham and Collins 2011; Cushion et al. 2007; Cushion et al. 2006).

Models *for* coaching present an idealistic view of the coaching process. The most well-known example of such a model is Lyle (2002) and has been more recently updated by Lyle and Cushion (2017). This ideal model is an ‘all-embracing’ rationalist explanation of the coaching process inspired by Weber’s (Albrow 1990) ‘ideal type’ which is intended to be generalised to all coaches (Lyle 2002). The model views coaching as a systematic process where coaches can ‘attempt to control as many variables affecting performance, and their preparation’ (Lyle and Cushion 2017, 151). In the original and updated model there are four parts which include assumptions, building blocks, representation of component parts and interrelationship between them, and the operationalisation of the model. There are several assumptions of the model, with two more assumptions added in the updated model: first, a proviso that coaching practices are more uncertain and unpredictable than the model purports; and second, the model is a cyclical process of planning, training, and competition. The model consists of six key stages: initiation, goal setting, strategic planning, regulation, preparation, and competition. Initiation includes ‘recruitment’ and a ‘situational analysis’ of the coach, athlete and organisational needs. Goal setting includes identifying the expectations of the coach, athletes, and organisation. Strategic planning sets out practice, performance, and management goals over short, medium, and long term. Regulation gives coaches ‘threshold feedback’ based on the implementation of the planning cycles. Preparation involves ‘training unit preparation’ that is based on the management and subsequent ‘training adaptations’ of a session. Competition includes ‘competition unit preparation’ and ‘contest management’. Both preparation and competition phases inform an ‘evaluation recording’ which leads to a ‘decision point’ that lies at the heart of the model. The decision point takes into consideration several aspects, such as pre-determined schedules, performance model and environmental circumstances. The desire for such a model is premised on the assumption that coaches are likely to coach without reference to a conceptualisation of coaching (Lyle 2007b). However, alternative models *of* coaching have emerged, as the ideal model was not intended to be applied to practice.

Others have developed what is called a ‘mental model’ of the coaching process derived from the experiences of coaches. For example, Côté et al. (1995) interviewed expert gymnastics coaches using a grounded theory methodology to understand how they structured the coaching process. In comparison with the ideal model, Côté et al.’s (1995) model is based on empirical data, where the coaching process is influenced by coaches, athletes and context across competition, training and organisation. But others have noted discrepancies between the structure of the coaching process when compared across different sports (d’Arripe-Longueville et al. 1998; Trudel and Gilbert 2000). The over generalisability of the ideal model and the lack of generalisability of the mental model has led to a greater focus on the operationalisation of mental models that can better support the decision-making of coaches in practice (Lyle 2018).

Decision-making is defined by Lyle (2007a) as deciding and not deciding when coaches recognise a pattern of behaviour or circumstances when coaching. For example, Abraham et al. (2006, 3) devised a coaching schematic as a ‘big picture plan ... [that can] accurately reflect the coaching process in its entirety’. Following a structured interview protocol with nominated expert coaches, they argue that the schematic can accurately provide a ‘best fit’ of expert coaches’ development and decision-making processes. Furthermore, Abraham and Collins (2011) point out that previous models of coaching have paid insufficient attention to the multifaceted nature of the coaching process. Consequently, they propose the Professional Judgement and Decision Making (PJDM) model which includes classical and naturalistic decision-making processes that are ‘nested’ in micro technical planning, meso socio-tactical planning and macro socio-political strategy planning. According to Abraham et al. (2014) coaching as a nested process is achieved when coaches have pre-determined plans, like a mental model, which they can adjust based on observations, evaluations, and reactions to goings-on. But changes might occur when coaches intervene in a practice that is not going to plan (Croather et al. 2018). Intervening has been seen as an essential part of decision making (Lyle and Cushion 2017), where a coach’s epistemology is guided by their mental model at a meso or macro level which subsequently influences what they do at a micro level. In this sense, the PJDM model offers a compromise between the ideal model and the mental model because it structures the coaching process as well as supporting decision-making in practice.

It is believed that mental models can act as a series of frames or mental images to filter coaches' decision-making. Abraham and Collins (2015) explored the decision-making processes of coaching athletics, where coaches were asked to analyse, diagnose, and prescribe solutions for an athlete. The responses of coaches were not based on formal known rules or theory, but rather were guided from their own 'personal theory or rules', which Abraham and Collins (2015) regarded as showing a lack of professionalism in judgement. Interestingly, when prompted further by the researchers for more explanation, the coaches were more likely to refer to formal rules or theory than personal theory or rules. Consequently, Abraham and Collins (2015) recommend for coaches to be placed in positions of uncertainty during their education, as that is when they demonstrated a greater level of professional judgement. Such a proposition is consistent with what Collins et al. (2015) call the 'expertise-based approach' to coach education programmes which marks a departure from the competency-based approach that is currently endorsed in the UK. There have been more innovative developments with the emergence of shared mental models, such as Collins and Collins' (2020) Ishikawa plan and Cooper and Allen's (2018) practitioner based coaching model. Both the Ishikawa Plan and the practitioner-based model are based on a 'plan-do-review' cycle in which coaching is seen as a continually evolving process where both coaches and athletes have agency in learning.

In response to the enigma, here coaching *is* a process that is part of an intervention programme which is planned and strategically coordinated by coaches. This process is typically modelled to assist coaches' decision-making processes in practices. Importantly, athletes, too, have agency for how the process is negotiated because learning is seen as a 'partnership' between coaches and learners (Cooper and Allen 2018). However, the coaching process shares a similar tendency with coach learning research in the way that it privileges coaches and athletes as the most significant actors. The ideal model *for* coaching reflects an ideal process but does not have direct application to practice. Although models *of* coaching provide a more grounded process, once they depart from the ideal model, they have faced difficulties in trying to negotiate a 'best fit' because such models must be individualised to every coach. Decision-making is at the height of an anthropocentric coaching process, as it is seen as the 'most important' aspect of coaching (Lyle and Cushion 2017). But is it really? Yes, decisions are important, but perhaps what *makes* them

important is even more crucial to explore. This is what has been argued by coaching practice research which prioritises the second delivery component of Lyle and Cushion's (2016) four components of the coaching process.

Coaching practice

Coaching practice research emerged as a response (Jones et al. 2016), or, as North (2013b) says, an 'over-reaction', to the modelling rationality of the coaching process. In contrast with fixing and stabilising the coaching process via models, practice focuses on the complexities and dynamism of coaching. This has been aptly put by Cushion (2007, 397) who criticises the use of modelling in producing:

unproblematic representations of what are complex actions and, as such, can only plot hierarchical relationships and interactions without generating an understanding of the functional complexity that lies behind it.

Here, there is an urge for examining the social and cultural contexts, personal experiences, philosophies and practices of coaching. This is some of the functional complexity that *lies behind* coaching which practice theorists are trying to bring to the foreground because they are overlooked in models (Jones et al. 2002). The coaching process is not a 'clean affair' but involves ambiguity, and coaches should be better supported to deal with such complex realities in practice (Jones and Wallace 2005). Bowes and Jones (2006) argue that coaches work 'at the edge of chaos', neither in complete stability nor in complete flux, and intimate that getting to what coaching truly *is* can be difficult to define. Consequently, this section sets out what coaching *is* from several theoretical conceptualisations, including social decision-making (Jones and Corsby 2017), the phronetic approach (Hemmestad et al. 2010), orchestration (Jones and Wallace 2006) and the micropolitics of power (Denison 2007; Potrac and Jones 2009).

According to Jones and Corsby (2015), coaching is not a decision-making process that is located solely in the mind, but rather is inextricably embedded in social interactions. Jones and Corsby (2015) make several criticisms of the 'nested' PJDM model discussed in the previous section. Namely, they argue that the PJDM model has an over-reliance on pre-determined criteria, pre-

emptive thinking, an over emphasis on performance markers and a tendency of using reflection to an end. Alternatively, drawing inspiration from Garfinkel's (1967) ethnomethodology, 'rules governing perceived effective decision-making' are based on the 'normative orders' of coaches' interactions. Corsby and Jones (2020, 354) argue that coaches' observations, or what they refer to as 'seeing', are based primarily on their 'reading of the game'. In other words, the ability of coaches to make sense of an event is based on an action or series of actions that precede the subsequent interaction which informs any future reading of the game. Examples were given from pre- and post-match team talks during games where the coaches previous reading of the game influenced the subsequent actions of the players. Players in compliance were perceived as 'playing well' which secured their future selection. If players failed to comply or 'fit in' with the coaches' wishes they could potentially be deselected from the team. At other times when the coaches failed to see other aspects of players' actions, due to over-prioritising what they wanted to see, this could lead to a perception of non-compliance or incompetence in the players' ability to follow instructions. Here, decisions are not seen as the most important aspect of coaching, but rather because of the social context where coaching takes place.

The phronetic approach has been allied with Aristotle's notion of 'phronesis' which refers to how coaches interpret practice situations and reach appropriate judgements. Jones and Hemmestad (2019) argue that the social context of practices that coaches operate within demands that they are 'practically wise'. Developing from earlier work (Hemmestad et al. 2010; Stendal and Hemmestad 2010), practical wisdom is considered as the ability to deal with complex and problematic situations. Behaviour is 'situation-dependent' as opposed to being rule governed and 'know-how' is developed because of repeated instances. It is precisely through the constant adaptation to situations that coaches develop the ability to 'act well'. Following a case study of an elite Norwegian handball coach, Jones and Hemmestad (2019) argue that a practically wise coach recognises that coaching is an emergent, contextual and a historically based activity. Emergent, as coaches frequently must adapt to an ever-changing environment. Contextual, as practices are created by and act upon individuals where coaching plays out as situated action. Historical, as coaching is in a time and place where intersubjective interactions provide structure for action. While structure is not necessarily abandoned in this view, modelling is criticised as it collapses the coaching process and hides a 'much more complex and multifarious process' (Jones et al.

2016, 19). Unlike models, the phronetic approach to coaching is committed to an idea that coaching cannot be determined in advance (Standal and Hemmestad 2010). Rather, coaching is seen as better placed within the social and cultural arrangement of practices. Consequently, the role of the coach has been conceptualised as that of an ‘orchestrator’.

Orchestration in this context is considered a ‘realistic representation of coaching’ for dealing with ambiguity and the multifaceted nature of practices (Jones and Wallace 2006). According to Jones et al. (2013), a precursor to orchestration is ‘noticing’ where the coach looks for and notices opportunities to act. This is a crucial part of Lyle and Cushion’s (2017) ‘delivery’ component of the coaching process for when a coach intervenes in a practice. However, orchestration involves ‘steering’ rather than ‘controlling’; a dynamic interactive process where coaches are ‘behind the scenes pulling the strings’ towards meeting coaching objectives and attuning to the minutiae of practice (Jones et al. 2013). Santos et al. (2013) argue that coaches ‘steer’ and ‘stage-manage’ coaching practices by scaffolding the learning environment through replicating game-like situations which are uncertain and ambiguous.

Jones and Ronglan (2018) demonstrated through two practical coaching examples how to orchestrate the ‘quiddity’ of coaching practices. Quiddity is a term borrowed from Garfinkel et al. (1981) which refers to the essence of a practice that is taken to be a relational endeavour. The coach engineers a few similar situations that players will face in real-time games. In one of the two examples given, they indicate that a two (attackers) versus one (defender) attacking overload is not realistic enough to the game. Instead, to emulate the game more realistically, the practice would need to be a seven versus eight or ten versus eleven, presumably because most games are eleven-a-side. In the second example, they indicate that coaches often ‘delegate’ authority to their assistant coaches and take a ‘back-stage’ role by micromanaging the practice. Although in competition settings coaches’ actions are even less intrusive, Ritchie and Allen (2015) point out that coaches continue to orchestrate as they silently monitor athlete’s preparation and performance. Indeed, Jones and Hemmestad (2019) argue that athletes work within the coaches ‘set frame’ for how they exercise their craft through judicious judgement. In this sense, coaches are seen as ‘more capable others’ (Allen and Reid 2019) who orchestrate the learning of athletes

by constraining and enabling practices. As an orchestrator, then, coaches coach unobtrusively (Jones and Wallace 2006, 61).

The coaching environment, however, is a contested workplace where power is manifested from the behaviours of coaches and their relationships with governing bodies of sport, managers, assistant coaches, athletes, and parents. There are several studies related to the work on the 'micropolitics of coaching' which is defined as the way coaches manage political interactions between social actors within their working context (Potrac and Jones 2009). Thompson, Potrac and Jones (2015) revealed the 'gritty' realities of a newly appointed fitness coach at a top-level professional football club, where the politics of coaching revolved around his interactions and relationships with the manager, assistant coaches and players. As a recent graduate with limited experience, his work was often shunned and belittled by the more experienced coaches at the club. Despite his efforts to adopt a 'professional front', the deep-seated 'anti-intellectual' culture at the club ultimately led to his dismissal.

Thomson and Sparkes (2019) explored the micropolitics within a Physical Education (PE) department during an intense period of Office for Standards in Education, Children's Services and Skills (Ofsted) inspections. Different forms of power were identified for how policies, curriculum and timetables were negotiated among various staff members. 'Power through' is characterised as how the department could achieve an outstanding grade. 'Power with' considers how the head of department fosters a shared vision among colleagues for aligning an idealistic form of PE to the policy. 'Power over' is a form of dominance by the head of department to minimise resistance from others. Thomson and Sparkes (2019) argue that teachers were 'micropolitical players in the game' that is influenced by structural factors, such as school policies, which later become translated in schools.

In one of the few studies that explored the micro-dynamics of community sport work, Gale et al. (2019) argue that coaches' relationship with other coaches, players, parents, and schools is a strong indicator of trust. The insecure occupational environment is identified as a possible reason for the lack of trust among coaches who are suspicious of other colleagues' motives and intentions.

Consequently, coaches used covert strategies to assess the motives and intentions of others to determine if they could be trusted or not.

Cushion and Jones (2006, 2014) revealed a hidden curriculum at work within an academy that mistakenly prided itself as being 'player centred'. Contrary to the player centred ethos, observations revealed that the coaches would often use very abusive language, personal castigation, and threats of physical exercise during coaching practices, which they justified as a necessary stimulus for producing professional players. Players were submissive and merely expected to respond in the 'correct' way within a culture of domination. Players who acted in accordance with the 'habitus' (Bourdieu 1977) of the academy were considered as 'good players', while injured players were given the status of 'peripheral' and players who did not comply were labelled 'rejects'. This hierarchy of power within the academy perpetuates a form of 'symbolic violence' which is reinforced by the coaches' actions and perfunctorily accepted by the players. However, Mills and Denison (2018) suggest that innovative practices are possible if coaches can disrupt the movement of power in a way that can disturb the making of athletes into docile bodies. For example, Denison (2007) reflects on his own experiences of coaching an athletics' runner through the Foucauldian (1991) notion of 'power', where control and discipline of bodies is exercised through surveillance. An alternative Foucauldian interpretation of power suggests that the problem might be with his methods of training that had an unintended consequence in producing docile bodies. This points us in the direction of what coaches *do* in practices as being necessary for developing a conceptualisation of coaching.

Conclusion: Beyond critique and towards cooperation

To summarise, coaching has been conceptualised as a 'social practice' (Jones and Hemmestad 2019) where the coach is no longer seen as an 'exclusive controller' in the delivery of practices (Konoval et al. 2018). Rather, the coach is seen as an 'orchestrator' (Jones and Wallace 2006), where they steer and scaffold practices by replicating game-like situations. Despite these insights, power remains largely associated with human politics, as practices are influenced by the interpersonal relationships with others in developing reputations and forging alliances. Consequently, claims that coaching is relational have arguably not gone far enough, as the

‘management’ component of the coaching process remains overlooked for how practices are assembled (Lyle and Cushion 2017).

Disagreements remain unresolved in the enigma for how coaching *is* conceptualised. On the one hand, *cognition* has been privileged in a strategically coordinated process that can be planned and modelled (Abraham and Collins 2011). On the other hand, *social* interactions prioritise the delivery of coaching practices (Jones et al. 2016). However, such a critique runs the risk of ‘running out of steam’ (Latour 2004a). Rather than viewing these as two competing agendas which has typically been the case because they have often been framed as a ‘debate’, here it is argued that coaching can be seen as both a cognitive process and a social practice. What remains unaddressed, however, is what coaches *do* in the delivery of practices and, thus, I turn my attention to coaching pedagogy research as a way for giving insight into Lyle and Cushion’s (2017) fourth ‘management’ component - handling of resources, facilities, equipment, and finances - of the coaching process.

Third main area: coaching pedagogy

The third area of literature reviewed in this chapter aims to understand what coaching pedagogy research tells us about what coaches *do* in relation to the ‘management’ of practices (Lyle and Cushion 2017). I first give an indication of how recent work in this area has debunked the idea that the coach is at the centre of coaching. Then, I go on to introduce two coaching pedagogies: ‘Game Sense pedagogy’, which is an ‘athlete-centred approach’ to coaching (Light 2004), and the Constraints Led Approach, which is an ‘athlete-environmental-centred approach’ to coaching (Renshaw et al. 2010).

De-centring the coach from the centre of coaching

Coach-centred coaching is considered the ‘traditional’ approach to coaching where coaches display autocratic or directive behaviours (Kidman 2010). This stems from a culture where coaching has been associated with training which prioritises the ‘voice of coaches’ (North et al. 2020), as athletes engage in repetitive drill-like practices. Here, coaching tends to be viewed as prescriptive, where coaches control not only the dialogue but the actions of players because they see this as an essential element of coaching success that is most often associated with winning. Pill

(2018) identified four characteristics associated with traditional coach-centred coaching. First, drills are the predominant practice tool, and this is consistent with a conventional practice design that starts with a warm-up, followed by closed 'blocked' practices or open 'random' practices, and finish with a game. Drawing inspiration from Bourdieu's (1977) notion of 'habitus', Light and Evans (2013) argue that coach-centred coaching is influenced from coaches' prior experiences as an athlete. Hall and Gray (2017) explain that coaches coach in this 'crude' way because they have a lack of self-awareness and conceptual understanding of how their coaching style is impacting on what they do and the effect it has on players in practices. Consequently, this has led to an 'uncritical inertia' which has become culturally embedded in coaches' beliefs about coaching (Cushion 2013).

Second, there is an emphasis on producing technically oriented players with an emphasis on training isolated skills in drills which can then be transferred into games. Chow et al. (2007) refer to this as 'skill-to-tactic' training which emphasises the development of technically oriented players. Aguiar and Light (2018) highlighted differences in PE teachers', who were also sport coaches, uptake of game-based approaches in their teaching and coaching practices. A contradiction was identified in the way that the teachers were inclined to implement athlete-centred approaches in their teaching practices, but when coaching, they tended to implement a coach-centred approach. On the one hand, characteristics associated with the coach-centred approach include 'prescriptive' practices that were conducted in a 'traditional format', where the coach is 'directive' or in 'command' through 'direct instruction' resulting in the outcome of 'transmitting knowledge' to players (Aguiar and Light 2018, 7). On the other hand, characteristics associated with the athlete-centred approach were associated with 'start[ing] the session in a different way' by 'coaching through games' which prioritised an 'inquiry-based approach', where the teacher 'giv[es] up control' and instead uses 'questioning' to 'empower the athletes to find answers by themselves' through 'reflection' and 'collaboration and dialogue' (Aguiar and Light 2018, 8). The contradiction between teaching and coaching is due to the teachers perceiving PE as a mandated subject, where their practices reflect the values of an athlete-centred approach based on inclusivity and enjoyment of playing sports that has little focus on performance, while the teachers' coach-centred approach to coaching was because athletes chose freely to participate, resulting in a greater focus on teaching technical skills to improve their

performances. The inclination of teachers to continue to do coach-centred practices epitomises the ‘disciplinary legacy’ (Konoval et al. 2018) of coaching and, perhaps, reflects the move towards ‘athlete-centred’ conceptualisations of coaching.

Third, when something goes wrong in a session, the role of the coach-centred coach is to give athletes specific feedback on what to ‘fix’, or the exact moves to perform if they are not performing the movements correctly (Pill 2018). This predisposes coaching to be a linear process from the teacher or coach to athletes (Renshaw and Moy 2018). But Cope et al. (2016) suggest that even coaches who use questioning, rather than instruction, can still do so in ways that perpetuates a coach centred approach where questions act as a recitation rather than a discussion of athletes’ performances. The coaches’ limited conceptual or practical understanding of their behaviours has been considered an ‘epistemological gap’ (Light 2008) between the coaches’ actual behaviours and their perception of how to facilitate coaching (Hall and Gray 2017).

Fourth, coaches are ‘commanding’ as they do most of the talking, hence they are coach centred. This is consistent with Harvey et al. (2013) who identified coaching behaviours as predominantly based on instruction and feedback. Alternatively, game-based approaches have been introduced as an alternative to the criticisms that have been levelled at coach centred coaching, where the coach is de-centred from the centre of coaching and practices are oriented towards athletes. Two such approaches will be discussed: Game Sense pedagogy and the nonlinear pedagogy of the Constraints-Led Approach.

Game Sense pedagogy

Game Sense pedagogy (GSP) originated in the mid 1990s and has a performance focus associated with games (Jarrett and Harvey 2016). Learning is placed within the context of games and is socially constructed by the players. As a result, the dynamics of power are not seen as hierarchical but as equal, and this changes the relationship between coaches and players, and the players themselves (Light 2012). There is also an emphasis on equal opportunities for participation which encourages a developmental focus in games that can be made progressively more challenging as the knowledge and skills of the players develop. Coaches are encouraged to design games, rather

than drills found in traditional coach-centred approaches, in such a way that promotes teamwork between players, irrespective of abilities or skills.

Another ethical aspect of GSP is that it establishes a socio-moral environment where young people feel safe to experiment and make errors from which they can learn. Young people are actively encouraged to test out ideas with the goal of helping them to be more ready to perform in competition settings. Instead of coaches initiating a correction through instruction as found in the coach-centred approach, Harvey (2015) suggests coaches should wait at least five seconds before an answer is given in game-based activities. This contrasts the coach-centred approach where silence is used less frequently as coaching is 'highly directed, autocratic and pre-emptive' (Partington and Cushion 2012, 99). In contrast, game-based approaches place greater emphasis on coaches developing higher order questioning. For example, Harvey and Light (2015) give an example of coaches posing a question by dividing players into small groups to encourage them to have a 'debate of ideas' to generate solutions to problems in practice. Instead of stopping practices completely, they suggest for coaches to speak to an individual player at the side of the field while the game continues.

In another collaborative action research study, Evans and Light's (2008) evaluation of an elite rugby coach's change from coach centred to GSP indicates that his training became more dynamic and better flowing than before the intervention. More specifically, two changes occurred: (1) games-based training and (2) players were included in decision-making processes. Findings revealed that before the coach implemented GSP, there was a lack of flow between the coach's warm up and the rest of their practices. However, once the coach adopted a GSP of match-like realism, he developed a better flow in his warmup whilst at the same time embedding tactical and skill aspects of play. But Croad and Vinson (2018) have shown that while elite coaches already use questioning, they might not be effectively developing athlete decision-making if the questions are largely being driven by coaches.

Nevertheless, some problems have been identified with the implementation of GSP. Light (2004) identified three challenges when implementing GSP: power relations between coaches and players, aesthetics of training and time constraints. First, coaches might be reluctant to 'let go' of

their authoritarian position of coaching players that is apparent in the coach-centred approach. Second, coaches expressed a misconception that in GSP they might not be perceived as coaching from merely being a 'ball roller' since they have a less directive role in practices. Third, GSP takes longer to implement than coach-centred coaching because there is more emphasis on how to structure practices through 'games' as the main context for learning. The limited knowledge of applying 'game-based approaches' was also highlighted by Light and Evans (2010) in their study of elite rugby coaches. Only one in four coaches demonstrated knowledge of applying some principles of GSP in their practices, such as discovery learning, while the other coaches largely adopted a coach-centred approach in the way that they prioritised learning through predictable practice structures. The coaches' preferences for staying with the status quo of accepted coaching practices was due to their perception of the environment in elite sport as not being conducive to the more holistic and humanistic GSP. Furthermore, Reid and Harvey (2014) identified three problems in the provision of coach education programmes: conceptual differences of understandings, inconsistencies in provision and limited opportunities for coaches to develop a 'game sense'. Each of these problems raise important considerations for how to best support the education of coaches. The first points to a lack of consensus *about* coaching, the second concerns interpretations of *how* to coach and the third might be considered as a logistical challenge which stems from the lack of understanding and inconsistencies in provision.

Hall et al. (2016) also point out that the separation between training form and playing form activities is problematic and instead urge for more attention on how practices are designed and implemented. Notably, they advise coaches to pay close attention to 'conditions' in practices and give an example of rugby coaching where 'full-contact tackling is replaced with a simulated touch' (Hall et al. 2016, 19). Conditions place greater emphasis on the 'management' component - handling the resources, facilities, equipment, and finances - of the coaching process. However, Lyle and Cushion (2017) do not specify that management is inclusive of the delivery of coaching practices, which might suggest it needs to be reworked.

Although the coach is no longer at the centre of coaching in GSP, they appear to have only been replaced by the athlete, as it has been characterised as athlete, rather than coach, centred. But this might lead to treating 'coaching' unproblematically, as the question of whose agency (i.e., coach

or athlete) becomes lost in translation. This has led to the emergence of an alternative nonlinear pedagogy called The Constraints Led Approach.

The Constraints Led Approach

The Constraints-Led Approach (CLA) is a nonlinear pedagogy theoretically informed by motor learning, ecological psychology, and dynamical systems theory (Renshaw et al. 2010). Nonlinear pedagogies argue that teaching and coaching should account for the nonlinearity of human learning (Chow 2013, 5). Some key components of CLA's nonlinear pedagogy include constraints manipulation, functional variability, attentional focus, representative design, and information-movement coupling. First, constraints are defined as boundaries or features that are designed to manipulate a learner's behaviour to facilitate the emergence of functional movement patterns (Chow et al. 2007). Before constraints can be applied to practices, however, coaches must identify the key rate-limiters, or weaknesses, of teams from which they can implement constraints in games to overcome these problems. Constraints are classified as either performer, environmental or task: performer constraints include the individual or personal constraints; environmental constraints refer to physical or social constraints; and task constraints relate to rules or equipment. Closely linked to constraints is the notion 'affordances' where the environment affords or invites opportunities for action. Renshaw and Chow (2019) identified various affordances, including substances, such as playing surfaces, objects or tools like cones and balls; places, which are specific to the setting; and events, such as lesson plans. Coaches in CLA have to be able to see through the eyes of players rather than their own, as a way to understand how the affordances of the environment impact upon the movement of players (Renshaw and Moy 2018).

Second, skill acquisition is developed through 'functional variability' in which motor learning encourages players to become more adaptable by creating environments with high levels of variability (Renshaw and Chappell 2010). In comparison with coach-centred coaching, the task design in CLA reframes performance variability as an exploration rather than an error to be corrected (Pinder and Renshaw 2019). As a result, there is a greater emphasis on players' demonstrating competence through their actions rather than for the coach to stop practices and highlight player in-competencies. Third, there is greater emphasis on players' attentional focus in

the environment (external focus) rather than on their body movements (internal focus). According to Chow (2013), this requires attention on the outcome of players' actions rather than on training the technique of an action. Fourth, another key component of nonlinear pedagogy is information movement coupling. This component is a pedagogical principle that recognises the importance of creating relevant informational properties that can help players to develop optimal movement solutions. Renshaw et al. (2009) suggest developing practices so that players can focus on key specifying information which is necessary to produce functional movement solutions to those that are found in the performance environment. By doing so, players are encouraged to invent novel ways to solve problems and find solutions in game-like practices. This also recognises that coaches might need to adjust practices through task simplification, such as by changing the size of the ball, number of players, or size of the pitch, so the practice task matches the players' age and stage of development (Renshaw et al. 2009). Fifth, practice and training tasks need to be representative of a competitive sporting context. According to Davids et al. (2013) coaches should use dynamic practices over static drills that can more closely simulate performance demands. This makes it necessary for coaches to design practices in ways that can help players self-regulate their behaviours by attuning to the relevant information needed to perform in such environments (Chow et al. 2007). As a result, the representativeness of practices to the performance environment is dependent on how individual, task and environmental constraints are implemented.

A few similarities and differences can be pointed out between CLA and GSP. CLA and GSP both endorse a holistic view of skill acquisition, where the role of the teacher is to facilitate practices. However, while GSP is 'learner-centred', CLA is 'learner-environment-centred' (Renshaw et al. 2016), which means that the learner is seen as being inseparable from the environment (Renshaw and Chow 2019). Other differences are found in the theoretical underpinnings and processes of learning. On the one hand, GSP shares a similar problem with its predecessor Teaching Games for Understanding (TGfU), for not being initially theoretically supported, as it was generated by practitioners for practitioners. Learning in GSP is primarily a cognitive process that relies on developing players' understanding through changing, constructing, or enriching knowledge structures. On the other hand, CLA is informed by nonlinear pedagogy where the environment

supports the pedagogical decision-making and design of practices. Learning is emergent in CLA, where the emphasis is on players' ability to adapt to the environmental and task constraints.

Some problems have been identified with CLA. Chow (2013) identified several challenges, including the time-consuming nature of CLA, the enhanced level of expertise required of practitioners and greater theoretical knowledge expected of coaches. Renshaw and Chow (2019) also highlighted the limited uptake of CLA by practitioners due to the 'dense academic language' and lack of depth in practitioners' understanding of CLA's key principles.

Conclusion: Reassembling coaching from its practices

To summarise, although game-based approaches, such as GSP and CLA, de-centre the coach from the centre of coaching, coaches still appear to be inclined to do coach-centred coaching (Aguar and Light 2018; Light and Evans 2010; Renshaw and Chow 2019). While CLA recognises Lyle and Cushion's (2017) management component, as it brings different elements of the environment to attention, such as resources and equipment, the emphasis remains largely on the delivery component of practices, which is unaccounted for in their definition of management. The environment is not seen as an actor but is an appendage to the actions of athletes, hence CLA is an 'athlete-environmental centred approach'. Thus, Lyle and Cushion's (2017) management component needs to be reconceptualised so that it is seen as being inclusive of the delivery component in coaching practices. Otherwise, humans, whether that be coaches or athletes, will continue to be predisposed over nonhumans in conceptualisations of coaching practice.

Consequently, in the second section I draw on literatures around sociomateriality for considering how these ideas can be brought to bear in reassembling coaching from its practices, so that both the social (delivery) and material (management) are assembled back together again.

Section two: reconceptualising coaching as a sociomaterial practice

Following my review of the three areas of coaching research above, I now make a case for reconceptualising coaching as a sociomaterial practice. Materials and materiality have either been downplayed or completely ignored in previous conceptualisations of coaching, which means that they run the risk of being partial at best or misguided at worst. The management component (Lyle and Cushion 2017) of the coaching process inadequately accounts for what things *do* in the delivery of practices. This necessitates an alternative conceptualisation of coaching so that the social and material are assembled back together again. In what follows, I first introduce the terms materials, materiality and sociomateriality. Then, I identify some of the prior assumptions of sociomateriality and see how these compare with the three discrete areas of coaching research in section one.

Materials, materiality, and sociomateriality

The focus on materials and materiality has been described as the ‘material turn’ in the social sciences (Leonardi et al. 2012; MacLure 2015). The material turn perspective argues that materials and materiality are so bound up with our everyday lives that we cannot do anything in the world that does not in some way entail material means (Orlikowski and Scott 2008). The absence of materials and materiality has been recognised by sociomaterial studies in education, organisational and science and technology studies. They argue that such an oversight necessitates a reassembling of practices so that we can have a more faithful description of how education, organisations and the sciences are assembled. Drawing inspiration from actor-network theory (ANT), the methodology that binds this thesis together, to be faithful means ‘to follow the actors themselves’ (Latour 2005a, 12), for which actors can be human or nonhuman.

Sørensen (2009, 61), writing on the sociomateriality of education, provides a useful distinction between material and materiality:

I let material stand for an entity that has achieved a purified (i.e. concrete form) non-human character, and I let materiality refer to the achieved quality of a hybrid that allows it to relate to other parts. Thus, the notion of materiality applies to the social as well as material parts.

Here, material as a noun is consistent with the definition of an object, bodies or a site that consists of matter and has some tangible character. Leonardi (2010), who writes on the sociomateriality of technology, further illustrates the notion of materiality as a practical rather than theoretical aspect of *something*. Matter, whether physical or nonphysical, is only important when it becomes instantiated into a practice. Gherardi (2012, 77), who writes on the sociomateriality of organisational studies, argues that materiality is ‘enacted, performed or produced ... in which agency is distributed between humans and nonhumans’ and, thus, necessitates an empirical focus on the study of practices, for how ‘relations are woven together as a practice unfolds’. Materiality can also be a nonhuman actor that becomes of ‘relevance’ (Hindmarsh and Llewellyn 2016) for accomplishing a task. The element of significance can be determined by asking the question ‘significance for what?’ For instance, a particular situation or context that one works within, the people they interact with, or for maintaining control. Although Sørensen (2009) does not specify sociomateriality in her definition of materials and materiality, it is captured in the word ‘hybridity’, as this incorporates both social and material relations. Fenwick (2015, n.p.) provides a useful distinction between sociality which refers to ‘symbols and meanings, desires and fears, and cultural discourses’, and materiality which relates to the ‘everyday stuff of our lives that is organic and inorganic, technological and natural, flesh and blood, forms and checklists, electronic records and databases, furniture and passcodes, snowstorms and dead cell zones, and so forth’. Sociomaterial signifies the ‘co-constitutive entanglement’ of the social and material in everyday life (Orlikowski 2007) where ‘agencies are so thoroughly saturated to each other that previously taken-for-granted boundaries are dissolved’ (Orlikowski and Scott 2008, 455). In this thesis, material is defined as an object that becomes relevant (Hindmarsh and Llewellyn 2016) and materiality captures the ‘hybridity’ or sociomateriality of how the social and material become entangled in practices.

Sociomaterial studies provide innovative methodological and theoretical conceptualisations with the increasing recognition of ‘how matter comes to matter’ (Barad 2003). A sociomaterial lens is considered important because previous social science methods have downplayed, taken for granted and made invisible the materialities in everyday life (Law et al. 2011). Latour (2004b, 53) aptly captures how nonhumans have been taken for granted, as if they are ‘sorted out

elsewhere, in secret, out of court ... [as if they] were undertaking mysterious operations to decide what nature was made of'. Although sociomaterial approaches do share a similar analytical approach in that they refuse to separate human and nonhuman dimensions of a practice (Fenwick et al. 2012), they have developed their own sophisticated language of concepts and methods (Macleod et al. 2019). Sociomateriality argues that all materials are social in the way that they are created through social processes, where action is contingent upon materiality. Sandberg and Tsoukas (2011) argue that we should resist any attempts at separating subjects and objects because the logic of a practice is in the 'entwinement' of social and material relations. Drawing from Heidegger's (1966) existential ontology, Sandberg and Tsoukas (2011) propose a practical rationality for developing sociomaterial practices, and this recognises that human beings' 'being-in-the-world' is the most basic form of entwinement. In other words, we are already always 'more-than-human' (Lupton 2019a) because we are inextricably entwined with others and things.

Prior assumptions of sociomateriality

Four assumptions of sociomateriality are identified and compared with the three discrete areas of coaching research in section one. These include (1) an empirical focus on the study of practices, (2) all practices are sociomaterial, (3) humans and nonhumans have an equal right to agency and (4) action is a relational accomplishment.

A first assumption of sociomateriality is an empirical focus on the study of practices. According to de Vries (2016, 11) Latourian ANT is an 'empirical philosophy':

While filling up his [speaking of Bruno Latour] little notebooks, he is replacing epistemological questions that have dominated most of philosophical tradition by ontological ones. And in contrast to most philosophers of the past who engaged their inquiries in an armchair, to answer his philosophical questions Latour goes out to do ethnographical research. For want of a better name, we may call him an 'empirical philosopher'. Neglect his empirical work and you will completely lose his philosophy; disregard the philosophical intent and you will be bogged down in a bewildering set of disparate books and papers.

Here, the empirical emphasis of Latour's philosophy is crucial, precisely because he is concerned with ontological questions that can only be addressed through ethnographic research. Latour's empirical work cannot be separated from his philosophy; if you lose one, then, you cannot make sense of the other. Latour (2007) argues for a 'thick description' of practices which focuses on the material definition of matter that is necessary for something to function, as opposed to a 'thin description', which does not explain anything about the gathering of human and nonhumans. Latour (1999, 307-309, emphasis added) defines a practice as 'the local, material, mundane sites where the sciences are practiced' and the empirical study is to 'recognise in the many entanglements of practices mere *intermediaries* and those who recognise *mediations*'. On the one hand, intermediaries are actors who transport action but how they act does not lead to a transformation in the network for which the actors are composed (Latour 2010c). On the other hand, mediators are actors who transport action which leads to a transformation in the network. Intermediaries and mediators offer a 'criterion' for describing actors within practices, and such a criterion fits in with what Hager (2012) calls as an 'exclusive' account of practice. Exclusive practices have a certain criterion for what is considered a practice (or not), whereas inclusive accounts generally include any activity that humans do as a practice, with the proviso that they have minimal features, such as rule-governed routines. In this thesis, a practice becomes intelligible not only from what the coaches define as a practice, but also from a thick description of how a practice is composed (Latour 2010c). Practices are defined more inclusively as 'a number of "repetitions" of the same practice' (Gherardi 2012, 161). An empirical focus on coaching practices offers a way for attuning to both human and nonhuman actors (**Table 1. What are materials and materiality?**). This means that materials are no longer the 'context' of places or resources used to support coaches' learning. Materials are no longer black boxed or inanimate matter in coaching process and practice research, and nor are they merely 'tools' as depicted in coaching pedagogy research. Rather, sociomateriality views materials as 'hybrids' in which their materiality can be traced (Sørensen 2009).

A second assumption is that all practices are sociomaterial. With practice as the main unit of analysis, there is an emphasis on the 'everyday work practices that are embodied, relational and material' (Rooney et al. 2014, n.p.). Mulcahy (2012) refers to sociomateriality as 'seeing double' where the success of a practice is contingent upon both social and material relations. For example,

Gherardi (2000) and Gherardi and Nicolini's (2002) workplace learning ethnographies demonstrate how safety knowledge is 'situated, relational and mediated' by technological artefacts at a construction site. Construction is sociomaterial from sites which implicate a number of actors, such as safety manuals, equipment, inspectors, prevention agencies and institutional actors. As safety knowledge becomes translated to the workers, it does so through the working practices of the construction site. An actor of particular interest is the 'modern cement mixer' at the site that has been modified with a new wheel to reduce the number of accidents from its 'antiquated version'. But in the translation of safety from the antiquated to the modern mixer, a series of 'competing discourses' emerged from the workers' refusal to adopt the new wheel in their cement mixing practices. The sociomateriality of safety manifested itself through governmental and para-governmental agencies which exerted control by 'acting at a distance' through inspections so that the modern cement mixer was adopted to ensure safer practices and the prevention of injuries. All practices are sociomaterial because they include social and material relations (**Table 1. *Who/what has agency?***) means that coaches are no longer placed at the centre of learning. Coaches and their interactions with athletes are not the most significant actors, like in coaching process and practice research, but only two of a heterogeneous actor-network. Objects no longer have limited agency in coaching pedagogy because sociomateriality grants agency to all actors, whether that be human or nonhuman.

A third assumption which follows from the first is that humans and nonhumans have an equal right to agency. In this sense, subject to subject relations do not hold any priority over subject to object relations (Reckwitz 2002). Nonhumans are no longer seen as being black boxed, inanimate matter or tools but as actors. This 'symmetry' (Callon 1986) derives from the semiotic notion 'actant' which gives agency to both human and nonhumans (Latour 2005a). Harman (2009, 34) exquisitely captures this point from the metaphysics of Latour, when he says, 'a mosquito is just as real as Napoleon, and plastic in a garbage dump is no less an actant than a nuclear warhead'. In their study of professional responsibility in medical education, Zukas and Kilminster (2012) started not with the doctor but the 'Blue form', which is completed when patients are near to death. By focusing on the Blue form, many different practices were made visible, such as the bureaucracy of completing the form, pedagogy in handling patient care, guidelines on best practice and the clinical expertise required for withdrawing treatment. Although sport coaches

do not deal with life and death situations, lessons can be learned from medical education for how coaching practitioners can be better supported for the difficult work that they do. While there has been a shift towards a focus on learning through the lens of practice, studies in coach learning continue to privilege the individual's cognitive knowledge structure. However, 'a foregrounding on materiality helps to avoid putting human actors and human meaning at the centre of practice' (Fenwick et al. 2012, 7). Given the empirical focus of sociomaterial practices, agency becomes 'distributed' (Bennett 2010) across human and nonhumans (**Table 1. What is the role of materials and materiality?**). Humans are not privileged above nonhumans because materials, too, participate in practices. Nor are nonhumans the mere 'context' or background to processes and practices of coaching. And materials are not simply 'tools' that mediate human action, but they are actors that act. Materials can have multiple roles which can be traced from their materiality.

A fourth assumption is that action is a relational accomplishment and that anything outside of these relations does not exist. This follows from the first two assumptions where practices are sociomaterial and agency is granted to both humans and nonhumans. But it also goes beyond them, as it suggests that no actor is more significant than any other in any given practice. Rather, there is a focus on the relational work that is co-produced by social and material relations (Decuyper and Simons 2016). In this sense, all the actors contribute to what is considered a collective accomplishment (**Table 1. How is coaching assembled from its practices?**). Relationality has significance for coaching research as it has also claimed that coaching is 'relational' (i.e., Jones and Ronglan 2018). However, relationality has arguably not been taken far enough because coaching is assembled primarily from the recall of coaches' learning, *their* decision-making processes, and athletes' interactions with *their* environment. Sociomateriality does not decide how to assemble relations *a priori* or in advance but rather grants the actors' agency themselves to assemble the actor-network.

	<i>Coach learning</i>	<i>Coaching process and practice</i>	<i>Coaching pedagogy</i>	<i>Sociomateriality</i>
<i>What are materials and materiality?</i>	Places or resources	Black boxed, inanimate matter	Substances, objects or tools, places, and events	Social and material relations, hybrids
<i>Who/what has agency?</i>	Learners and coach developers	Coaches and athletes and other key stakeholders	Coaches, athletes, and objects (but latter is in a limited sense)	Humans and nonhumans
<i>What is the role of materials and materiality?</i>	To support the learning of coaches	Subordinate to coaches' decision-making and an appendage to athletes' interactions	Environmental affordances that enable or constrain action	Multiple roles as they are actors in their own right
<i>How is coaching assembled from its practices?</i>	By the recall of the learner (coach)	Through cognitive processes or social practices	By athletes' interactions with the environment	Assembling relations of humans and nonhumans

Table 1. *A comparison between sociomateriality and the three discrete areas of coaching research for how materials and materiality have been taken up (or not)*

Chapter summary

In section one, I set out to understand how coaching has been conceptualised across three prominent but discrete areas of research: coach learning, coaching process and practice, and coaching pedagogy. After considering each in turn, a common deficiency identified was a theoretical and methodological privileging of the human. Indeed, there has been a tendency to talk of coaches' learning, their decision-making processes and social interactions, or athletes' engagement with their environments. Consequently, 'the voice of coaches' (North et al. 2020) and actions of athletes has become entrenched in conceptualisations of coaching practice. However, a key "gap" that has been overlooked in Lyle and Cushion's (2017) management component of the coaching process is the ontological dimension of what things *do* in the delivery of coaching practices. This means that the three areas of research are insufficient in themselves to adequately address the enigma, 'what *is* coaching?' Consequently, in the second section I proposed to reconceptualise coaching as a sociomaterial practice. Sociomateriality offers a way for attuning to the ontological dimension of what things *do* in practices. All practices are sociomaterial, where human and nonhumans are afforded equal agency and action is seen as a relational accomplishment. Without this material turn, our understanding of coaching will remain partial at best or misguided at worst.

Chapter three | Latourian actor-network theory methodology

Chapter three sets out the methodology of Latourian actor-network theory (ANT). I first give a brief introduction to ANT and highlight some of the key works that have been crucial to its proliferation as an alternative ‘sociology of associations’ (Latour 2003). I then outline a key feature of ANT’s metaphysics: a relationist ontology where the social is kept flat. Following this, I set out a version of Latourian ANT that was developed in this thesis. Five key concepts are drawn from the corpus of Latourian ANT: actor, network, trials of strength, translation, and articulated propositions.

Actor-network theory

If actor-network theory (ANT) were to have a forefather, then it would be Gabriel Tarde whose sociology at the start of the twentieth century shared two of the major arguments that are now put forth by ANT: there is no distinction between macro and micro for understanding society, and the artificial divide between nature and culture limits our understanding of human interactions (Latour 2002). However, Tarde’s ideas were eclipsed by Emile Durkheim who became the ‘main representant of [the] scientific discipline of sociology’ (Latour 2002, 2). It was not until Latour took interest in Tarde’s (1999) sociology from his republished book, *Monadologie et sociologie*, that some of his ideas have since been imported to ANT.

ANT can be traced back to the early 1980s in Paris from works in science and technology studies (Law 1999a, 2007a). Although the neologism ‘ANT’ was not formally introduced until the following decade, it was very much present in some of the earlier works. For example, Callon’s (1986) analysis of electric vehicles in response to increasing levels of air pollution in municipalities of France defined an actor network consisting of heterogenous entities that mobilise and form associations. Latour (1988a) argues that the ‘greatness’ of Pasteur, who developed an anthrax vaccine, was not solely a human achievement but equally associated with nonhuman actants, such as microbes. And Law (1987) argues that nonhuman actants, such as devices and documents, were essential for enabling successful voyages to India during Portuguese Imperialism.

The naming of ANT as a distinctive approach to social theory occurred around the 1990s. However, as ANT popularised it has also been met with some ANT-agonisms. For example, Latour (1999b), himself, denounced ANT on four grounds: ‘actor, network, theory, and the hyphen!’ but then later accepted it, as it was ‘so awkward, so confusing, so meaningless that it deserves to be kept’ (Latour 2005a, 9). Although ANT can be defined in the abstract (i.e., Law 2008) to do so runs the risk of betrayal because it is generally opposed to self-definition (Lee and Hassard 1999). Indeed, Law (1999, 2) argues that ‘the act of naming suggests that its centre has been fixed, pinned down, rendered definite’ (Law 1999, 2). But ANT has no such built-in inertia and rather needs to be translated by forming an equivalence of two things that are not the same into empirical case studies (Law 2008).

With the increasing uptake of ANT studies in the late twentieth century outside of science and technology studies and in different places across the world, it has come to be known as ‘After ANT’ (Law and Hassard 1999). The ‘After’ epitomises the ‘diasporic character’ of its network and highlights some of the similarities and differences between earlier and more recent theorisations of ANT (Law 2006). Into the twenty-first century ANT continues to proliferate in ever more different networks, yet so too have its progenitors who seem to have moved beyond ANT. In his magnum opus, *An Inquiry into Modes of Existence*, Latour (2013) does just that because he considers actor-networks as part of a much broader ‘new inquiry’. However, in this new treatise some of the familiar concepts are present while others are absented, and new concepts are introduced. This recognises that social theories do not stand still, and so our methods and concepts also must change to help us better understand practices. In this thesis, I put forth a version of ANT that follows the writings of the old and new Latour.

A relationist ontology

ANT asks questions concerned with what, and in what way, something must be before it can be properly called ‘objective, visible reality’ (de Vries 2016, 10). This marks a change from the reigning assumptions in philosophy since the 17th century which started with questions of epistemology before ontology (Bryant 2011a, 62). Agency in ANT is not the prerogative of humans (MacLure 2015, 2) but extends to nonhumans who have been ‘knocking on the door of sociology requesting a place in the account of society as stubbornly as humans did in the

nineteenth century' (Latour 1992, 153). ANT is best captured methodologically where 'subjects, culture and nonhumans are placed on equal footing' (Bryant 2011a, 225). This is not to say nonhumans are more important than humans, but that they are both on the same ontological footing. In other words, nonhumans are no longer treated as subordinate to humans but are autonomous actors. The relationist ontology of ANT is captured when Latour (1988a, 162-163):

taught at Gray in the French provinces for a year. At the end of the winter of 1972, on the road from Dijon to Gray, I was forced to stop, brought to my senses after an overdose of reductionism ... Tired and weary, suddenly I felt that everything was still left out ... I decided to make space and allow the things which I spoke about the room that they needed to "stand at arm's length". I know nothing, then, of what I am writing now but simply repeated to myself: "Nothing can be reduced to anything else, nothing can be deduced from anything else, everything may be allied to everything else".

Latour's moment of epiphany underpins the metaphysics of ANT, which sets out the irreductionist principle 'that nothing is reducible or irreducible to itself' (1988a, 158). Irreduction is a way of dealing with the philosophical dilemma between substance and relation or as Latour puts it, actor, and network (Harman 2007). The first part of Latour's critique is of reductionism when an object or thing is reduced to its individual pieces. This is reminiscent of materialism where the real essence of a thing lies in its matter. All the analyst must do is deconstruct the thing to its bare components (Harman 2016). But this falls when we consider, for example, human bodies, as they cannot be singularly reduced to Newtonian physics without considering the cascade of other relations that make up the 'social' interactions of what bodies can do.

The second part of Latour's critique is that something cannot be irreducible to itself. For example, this could be when we use a social construct as an explanation. To say that society explains the social hides all the relations that make the social manifest. Here society is made irreducible as a social explanation, when really there is no 'glue' that holds society together. Instead, there is only an array of human and nonhuman actors which are so heterogeneous that the task of 'reassembling the social' becomes particularly difficult, as actors 'swarm in all directions' (Latour 2005a). Yet,

at the same time, anything can be reduced or irreduced to something else so long as the work of 'translation' has been done. An actor-network is not composed of ready-made associations but requires work in forging associations so actors can enter a network. Latour (2002, 175) calls this a 'variable-ontology world' because actors don't 'swim twice in the same river'. Actors constantly define one another with no guarantee of stability in time.

Relationism in ANT is 'relative relativism' in the way that it 'sticks to the empirical task of tracing the establishment of relations' (Latour 1999c). Law and Mol (1995, 277) introduce the phrase 'relational materialism' in which sociality and materiality are produced together:

Objects, entities, actors, processes - all are semiotic effects: network nodes are sets of relations; or they are sets of relations between relations. Press the logic one step further: materials are interactively constituted; outside their interactions they have no existence, no reality. Machines, people, social institutions, the natural world, the divine - all are effects or products.

Actor-networks are nothing less and nothing more than their relations. Only actors within these relations exist. Reality is produced through the actor-networks that they are composed within. We can only talk of machines, people, and social institutions if they are composed of relations that allow them to exist. And as actors come together to form networks, they become ever more heterogeneous and intricate. Latour's relationist ontology of actors, where any human or nonhuman can enter a relation, is consistent with Tarde's first argument that there is no distinction between nature and society. So long as the work of translation is done to show how actors enter a relation, any relation can be made manifest.

The social is kept flat

Latour (2005a, 171) employs a cartographic metaphor for mapping the territory of practices by keeping the relations of humans and nonhumans entirely 'flat'. Flatness is associated with Tarde's second argument that there is no divide between macro and micro, and this has implications for place, size, and scale. In terms of place, the inquirer does not move from the local to the global and back again but stays in either one of the two sites for a period. And just because we stay in

the local does not necessarily mean it is smaller than the global. Actors are judged by their ‘alliances’ (Harman 2009) with one another rather than their size. The more actors in a network, the greater potential there is for an alliance (Fox 2000; Latour 1991). This has implications for the scale of the network which is contingent upon the movement of the actors. Actors move at their own pace and the inquirer should not attempt to speed up the inquiry by short-circuiting the network. If this happens, essential details associated with the actor-network may be left unaccounted for, and this is usually because interest has been on either the ‘actor’ or the ‘network’ and not on the circulation between them. ANT prioritises the circulation of an actor-network which has been described by Latour (Latour 2005a, 164) as a ‘slowciology’. In a slowciology there are no shortcuts when studying the circulation of an actor-network. However, slowness is a difficult feat, especially at a time when everything around us is moving fast and much faster than the past. Ulmer (2017, 207) offers a conciliation through what she calls a ‘slow ontology’ in which slowness is embodied in an ontology where scholars write on/with/through aspects of nature as a more responsive way for attuning to sociomaterialities. By doing so, the focus is kept on articulating the relations on what lies between the actor-network.

Building on the idea of a cartographic inquiry, Latour (2013) suggests that we must take the crumpled map of the social and open it out, flattening it, and all the actors associated with it. This flattening out is a way in which ANT can capture the distribution of actors and agencies of a network and examine its relational effects as a result (Decuyper and Simons 2016). The metaphor of ANT as a cartographic inquiry can be understood by considering how the development of Western cartography during the Renaissance enabled international trade and territorial conquest. For example, Latour (1987) describes how the dominance of Western cartography is attributed to the actor-network of cartographic theory, mapping technologies and regimes of trade and service, which all had to work together to produce maps as ‘immutable mobiles’. Immutable, as maps are stable entities of legible knowledge but also mobile in the way that they can be combined and transferred forms of knowledge for sea merchants who traverse the world. This is what Latour (1987) calls ‘centres of calculation’ where European cartographers of the Renaissance were able to ‘act at a distance’ to dominate the world in the form of international trade and territorial conquest. Maps in this sense are not *a priori* as they do not have meaning on their own but gain reality through their relations with people, discursive processes,

and material things (Kitchen et al. 2011). In other words, maps become known or exist through their relations and later become mobilised within other actor-networks, of which Latour (1987) calls ‘centres within centres’.

In summary, ANT is a relationist ontology where the social is made up of democratic relations between humans and nonhumans. The task of the inquirer is to trace these relations through the means of a cartographic inquiry. To do so, I will now go on to introduce a version of Latourian ANT which I draw on in this thesis.

Latourian actor-network theory

I chose Bruno Latour’s work on ANT to frame my study because each concept is informed by his relationist ontology (Latour 1988a) in ethnographic studies of science (Latour and Woolgar 1986; Latour 1987), politics (Latour 2004b) and law (Latour 2010a). I heed Latour’s (2013) call for others to extend his inquiry in other field where my thesis intends to act as a first step in moving along the trajectory towards developing sport coaching [SPOC] as its own ‘mode of existence’.

Although there is an explicit focus on Latour, he is only one of other seminal sociomaterial theorists like Barad (2005), Bennett (2010), Fenwick and Edwards (2010), Haraway (2016), Harman (2018), Michael (2012), and Mol (2002). I situate Latour’s work within the broader field by focusing more tightly on Michel Callon and John Law. For example, in chapters 5 and 7, I draw upon Callon’s (1986) famous work on Brittany’s scallop fishermen. Specifically, I drew upon his first (‘problematization’) of four moments of translation, for what he calls an ‘obligatory passage point’, where fishermen, scientific colleagues and scallops enter an alliance to domesticate the scallops. I draw upon Law’s (2002) work on spatiality for how objects can be conceived in either a network or fluid typology. I also refer to the work of Callon and Law for how they have shaped debates surrounding contentious concepts like ‘actor’, ‘network’ and ‘translation’. However, each of these concepts and the other two (‘trials of strength’ and ‘articulated propositions’) follow a version that is primarily attributed to the work of Latour, and therefore the overarching focus is dedicated to Latourian ANT.

Before introducing the five Latourian ANT concepts that have influenced this thesis, I start with a note on rigour that derives from Latour's notion of 'infralanguage'. Infra means 'below', so by infralanguage Latour (2005a) means that the network is irreducible to the actors themselves.

A rigorous ANT

The corpus of ANT concepts is an infralanguage for helping me, the inquirer, attune and not to confuse the actors own fully developed 'metalanguage' with that of my own (Latour 2005a, 49). According to Hultman and Taguchi (2010) the infralanguage of ANT helps to overcome the critique of the inquirer producing the ANT account in the place of the actors themselves. An ANT inquirer does not adopt a reflexive position, as this still holds the world at a distance, where subject and object become separated. Rather, the ANT concepts are 'infra-reflexive' because they are taken from a close reading of Latour's work at different points in his writings of ANT. Rigour is the marker of excellence in ANT's method:

If I had to provide a checklist for what is a good ANT account - this will be an important indicator of quality - are the concepts of the actors allowed to be stronger than that of the analysts, or is it the analyst who is doing all the talking? (Latour 2005b, 30)

Thus, I must be faithful to the actor-network by 'grant[ing] the actors back their own ability to make up their own accounts of the social' (Latour 2005a, 20). In other words, the infralanguage of ANT is a way of helping me attune to the actor-network. The five Latourian ANT concepts are:

- *Actors*, who can be human and nonhuman
- *Networks*, which are how actors become assembled together
- *Trials of strength*, which define what actors do
- *Translation of trails*, which describes how actors relate to each other
- *Articulated propositions*, which grant others the ability to speak on behalf of an assembled actor-network

Actors

Social science research has been preoccupied with the 'self' since the Enlightenment, where the human is considered as the most indispensable actor (Bradiotti 2013, 23). This anthropocentrism has led to a divide between the social and natural world which has cut the network in half with the social being the prerogative of social scientists (Latour 1993). It is unsurprising then that the term actor has most often been associated with the action of humans. The 'gravitational pull of humanism' (Lather 2015, 100) has led to other nonhuman agencies becoming marginalized or at worst made invisible (Waltz 2006). Instead, ANT gives agency to both humans and nonhumans derived from the semiotic term 'actant' (Latour 2005a). However, Adams and Thompson (2016, 2) caution this is not an attempt at 'relinquishing our humanity' but rather seeks to correct the anthropocentric biases of dogged humanist perspectives. Hamilton (2011) clarifies this point by suggesting that agency in ANT is not a pre-given property belonging to either humans or things but emerges through the relation of actor-networks. In other words, all actors are treated equally where one is not superior to any other.

Actors have 'free association' (Callon 1986) which means that humans and nonhumans can be studied on the same terms. Law (1992, 4) suggests that free association is not an ethical position but rather is an 'analytical stance' as both humans and nonhumans have agency that gives shape to, and shapes, action. In fact, if we were to say that only humans have agency then this would be ethically questionable. Free association grants actors the ability to make up their own account of what the social is made up of and it is no longer up to us, the inquirers, to limit the agency of actors in advance. The notion of 'generalised symmetry' (Callon 1986) has been used to denote the free association in giving agency to both human and nonhuman actors. Generalised symmetry contrasts with the 'first principle of symmetry' proposed by the Strong Program of Science Studies which 'explains nature by reference to society' (Bloor 1999, 85). In other words, the first principle of symmetry views 'all agency residing with society' (Bloor 1999, 85). Consequently, this means that there is no way in which agency can be attributed to things. This was overcome by Callon's (1986) generalized principle of symmetry which views nature and society as being co-produced. However, this is not to say we have some 'absurd symmetry' between humans and nonhumans but rather that we do not impose categorisations or limit the agency of nonhumans in advance (Latour 2005a, 76). According to Callon and Latour (1981, 280) all actors are

‘isomorphic’ in form which means that there is no way to decide the size of an actor in advance. Harman (2009, 17) also uses the term ‘democratic’ to acknowledge that all actors are granted an ‘equal right to existence’ irrespective of size or complexity, natural or artificial, human or nonhuman. The democratic rights of all actants have been well documented in Latour’s (1987, 1992, 1996b, 1999, 2002) work ranging from microbes, lawyers’ texts, scientists’ objects, doors, and the French railway system, Aramis. Given Latour’s metaphysics is completely democratic, where no *a priori* distinctions are made between any two actors, ‘all we can say is that some are stronger [or weaker] than others’ (Harman 2007, 35).

When human and nonhuman actors come together to form relations, the heterogeneity of their circulation in the world forms a hybrid. This means that cognitive abilities are no longer located inside the mind but are accounted for through the connections that lie outside of the mind. For example, we cannot say that a pilot is acting according to the plans in his mind. Rather, transformation of any ‘line of flight’ is precisely the work of human and nonhuman actors. Only when the many heterogenous elements of the plane are made to act as one, then it becomes an intermediary which refers to ‘what passes between actors in the course of relatively stable transactions’ (Law and Callon 1992, 25). In other words, ‘defining [an actor’s] inputs are enough to define its outputs’ (Latour 2005a, 39). For example, the technological controls in the cockpit allow the pilot to control the plane without having to move from their seat. But when something goes wrong or action becomes disturbed, we suddenly attune to the materiality of nonhuman actors. It is at this point especially when we come to see action can be overtaken by nonhumans (de Vries 2016, 94). Latour (2005a, 39) uses the term mediator for when an actor-network becomes displaced, where an actor or series of actors transform, distort, translate, and modify the meaning or elements they are supposed to carry. Latour (1999a, 176-193) identifies four meanings of mediation, the first of which is of relevance for elucidating the role of mediators. The first meaning of mediation is interference or an interruption in which a ‘displacement’ (Bloomfield and Vurdubakis 1999, 627) occurs in the normal or anticipated ‘program of action’ between two or more actors. Continuing from the example of the plane, this might be related to a fault with the plane. For example, aircraft have been known to come out of clouds upside down, or ships stray off course as they are thrown into panic by fog (Serres 2008, 68). Mediators are never a good indicator of their output because their specificity must be taken into account every

time so that their effect on the network can be studied. Intermediaries and mediators offer a criterion for describing actors when they come together to form associations in practices (or not).

The inquirer's role, however, is *not* to decide how actors should be made to act but rather is to understand whether they are mediators or intermediaries. Indeed, Latour (2005a, 108) returns to the oldest etymology of the word 'social' deriving from the Latin word *socius* for following someone else, a follower, an associate. In the first part of the cartography in Chapter five, I heed ANT's adage to 'follow the actors themselves' (Latour 2005a), which entails the "art of describing" everything and the possibility of going from one type of visual trace to another' (Latour 2012, 10). Next, I introduce 'network' to see how the relations are assembled.

Networks

The word network derives from the French term 'réseau' which relates to the many lines that converge in the form of a net (Latour 1996a: 370). Latour (1996a) cautions not to confuse the meaning of the conventional sense of a network which has a technical meaning, such as a sewage, train, subway, or telephone network because these are already final or in a stabilised form. In contrast, ANT views technical networks as networks that need to be carefully assembled and always in relation to actors.

In ANT, a network is an expression to check how 'much energy, movement, and specificity an account is able to capture through description' (Latour 2005a, 131). Latour (2003) refers to this inquiry as the 'sociology of associations' which focuses on the translation of forming an equivalence between an actor and its relations. This is opposed to the 'sociology of the social' which replaces translations with social explanations and subsequently sees nothing of the circulation between an actor and network. For this reason, the ANT's network contrasts with the macro-social entities, such as society. A macro actor like society becomes meaningless, as it does not have the means of circulation. As a result of the dissatisfaction in coming to realise the inertia of macro entities, the inquirer is forced to move back to the local or micro level interactions. But they soon feel the same sense of dissatisfaction where they return to structure. The infinite regress of moving from micro to macro or agency to structure, however, is not to be confused with actor and network. Importantly, one does not focus on either micro or macro in ANT. Rather, the

usefulness of the concept ‘actor-network’ derives from focusing on what lies *in-between* (hence, the hyphen!); the very means of circulation or movement from actor to network (Latour 1999a, 310). We do not end up with bigger and smaller networks as the micro and macro scale would indicate but rather with stronger or weaker networks depending on the alliances. In this sociology of associations, the ‘chains of circulation’ become visible through the circulation of the actor-network while the extremes, micro and macro, disappear (Latour 1999a).

There are two types of networks that can be distinguished in ANT: the first is the network setup and the second is what passes through the network once it has been set up (Latour 2013, 32). To illustrate the difference between the two types of networks, Latour (1999a, 137) gives an example of putting gas in his car in the little village of Jaligny in France. The network set up can be articulated by each intermediary step in the transformation of the oil from Saudi Arabia all the way to his car. On the point of difference between a network setup and what passes through the network once it has been set up, Latour says either we refuse the transformations and subsequently the petrol remains oil far away, or we accept the transformations but now we have petrol and not oil. To trace a network empirically, Latour (2005a, 132) offers the following provisos. First, circulation is only possible when there is a point-to-point connection between any two actors. Second, if there is no connection no trace can be made. Third, networks require work for circulation to take place. However, Strathern (1996) points out that actor-networks are susceptible to becoming an ‘endless extension [of] networks within networks’. Consequently, Strathern (1996) argues that there needs to be a ‘stopping place’ for when a network is ‘cut’ at a point to relieve the problem of infinite extension. The stopping place in my thesis was the date of submission (three years of funding). In the second part of the cartography in Chapter five, I will describe the network setups. Once networks have been set up, the actors undergo ‘trials’ to see whether their associations are strong or weak.

Trials of strength

Trials of strength describe the circulation between actor and network, where the job of the inquirer is to detail these trials. Actors are defined by trials of strength that are staged by an actor or series of actors who tests the ‘strength’ of network connections through devising experiments

(Latour 1999a, 311). According to Latour (2004b,195-6), one ‘pass[es] through a trial to know a little more about it’:

A bad experiment is not one that fails, but one from which the researcher has drawn no lesson that will help prepare the next experiment. A good experiment is not one that offers some definitive knowledge, but one that allowed the researcher to trace the *critical path* along which it will be necessary to pass so that the following iteration will not be carried out in vain.

During a trial, an actor might become a mediator or at other times they might fade into the background and remain an intermediary (Latour 1999c). This is not to say that an actor will remain a mediator or an intermediary because at any time the associations that hold the network together can weaken resulting in an intermediary becoming a mediator, or vice versa. In what follows, I re-describe two trials taken from Latour’s empirical fieldwork in laboratories as a way to heed Law’s (2008) call to illustrate ANT through empirical case studies.

Latour (1999a) reframes the ‘greatness’ of Pasteur by re-describing three trials of strength for how he developed the anthrax bacillus vaccine at his laboratory in Lille. In the first trial, the lactic fermentation process gains competence from the yeast, which is a useless by-product. Then, in the second trial Pasteur stages a ‘new artificial world’ to try out this new actor as he does not know what the essence of the ferment *is*. According to Latour (1999a, 123), Pasteur is a good pragmatist as for him ‘essence is existence and existence is action’. The third trial is what becomes of the second trial as to whether the ferment has competence for it to exist. Pasteur must convince other scientists that his trial is not a story, but rather, the yeast, in the first trial, is a living organism and, the ferment, in the second, gains competence in triggering the process of lactic fermentation. If Pasteur succeeds, then not only is he given competence but so too is the ferment. However, if he fails, the second trial would have become a waste and he would have remained a minor figure with a useless yeast and wasted chemicals!

In another empirical trial related to Thyrotropin Releasing Factor (TRF), a substance composed of three amino acids, Latour and Woolgar (1986) argue that TRF is *constructed* from inscriptions

generated by instruments in the laboratory. At the same time, TRF is constituted by a range of diverse techniques gleaned from studies of other disciplines. Prior to the experiments, TRF was nothing more than statements. But at the point when TRF became a stable entity through the construction of techniques in the laboratory, there were now both statements related to an object (TRF) and TRF as an object. An inversion took place after the point of stabilisation where the work of construction fades into the background (i.e., intermediary) and the object becomes a fact 'out there' (i.e., mediator). The statement related to the object TRF becomes a single reality giving the impression that the statement mirrors the reality of TRF, but the observations in the laboratory act to counter this illusion. In other words, the illusion is that the statement seems to carry the reality for the scientific fact TRF. But 'out-thereness' only gains reality by the many associations that lead to its stabilisation. This is reason why in ANT, a network is always something that is achieved and not merely as being already constructed in a stabilised form. In the third part of the cartography in Chapter five, I will describe some of the 'trials of strength' that are staged by the coaches under observation. To make sense of trials related to actor-networks, however, the inquirer is required to 'translate' the trails that are produced from the trial.

Translation of trails

Translation in French recognises the double meaning of making connections and betrayal or treason. Translation was introduced in ANT most prominently through the works of Callon (1981) for understanding how the relations among heterogeneous entities work towards a common goal, such as a new theory or the discovery of an object. A landmark study by Callon (1986) explored the depletion of scallops from articulating the translations between fishermen, scallops, and the wider scientific community at St. Bruic's Bay in France. The scallops were granted equal agency with the fishermen and wider scientific community as actors. Translation is defined by Callon (1981, 211) as 'creating convergence and homologies by relating things that were previously different'. Four moments of translation were identified in Callon's (1986) analysis: problematisation, interestment, enrolment and mobilisation. First, problematisation is concerned with what actors become enrolled in the network. Callon (1986) identified the fishermen, scallops, and the wider scientific community as the three entry points for the analysis. Second, interestment involves bringing the actors under control; in this case it was the scallops where the three researchers deployed a technique to domesticate the scallops. Third, the success

of domesticating the scallops to anchor was dependent on the scientific instrument towlines, predators, and transactions with the fishermen. Fourth, the three researchers acted as a spokesperson on behalf of the scallops at scientific conferences. Although on initial experiments the scallops anchored leading to an increase in reproduction, on future repeated experiments the scallops became ‘dissidents’ as the larvae failed to anchor (Callon 1986). This was exacerbated when the local fishermen shamelessly fished, ruining the long-term plans for the conservation of scallops.

The metaphor of translation was influenced by the early works of Michel Serres. According to Brown (2002, 5), translation for Serres was defined as the ‘process of making connections, of forging a passage between two domains, or simply as establishing communication’. Serres and Latour (1995, 70) reformulated the epistemology of science and its relation to culture of the human sciences as the ‘Northwest Passage’ ... [which] resembles a jagged shore, sprinkled with ice, and variable’. Every passage leaves a trail that can be described by the inquirer to prevent the actor-network from becoming a black box, where the chain of associations disappears (Latour 2013). For example, Latour (1996b, 118-119) distinguished between the diffusion model and the translation model for studying the uptake of innovations. The diffusion model starts from a macro-actor where successful command is associated with a central source (Fox 2000). The initial idea of power in the translation model ‘barely counts’; it is a ‘gadget, a whatchamacallit, a weakling at best’. For translation to occur the thing must interest other groups to form relations between actors. So, power is not something that is possessed but rather is explained through the actions of actors. And when a group becomes interested, the thing may become transformed a ‘little, a lot, excessively, or not at all’. Consequently, the translation model ‘becomes real and then manifests perhaps the characteristics of perfection, profitability, beauty, and efficiency that the diffusion model located in the starting point’. In the fourth part of the cartography in Chapter five I will ‘translate the trails’ that are produced from the trials of strength to illustrate how coaches overcome interruptions in practices. Next, I consider how ‘articulated propositions’ allow the inquirer to speak on behalf of an assembled actor-network.

Articulated propositions

Articulation is speaking in the name of another where the enunciator becomes a ‘spokesperson’ on behalf of the actors (Latour 2004b). An articulation can be well or badly constructed. Latour (2003, 157, emphasis original) argues that this is a political form of talking which answers the question: ‘*In the name of whom, of which other agents are we talking?*’ Returning to the example of Pasteur, to make a correspondence between lactic acid fermentation and the ferment in a linguistic sense would be absurd, as lactic acid fermentation does not *ferment*. Pasteur is only able to speak truthfully about the ferment if he articulates an entirely different set of relations (i.e., propositions) for the ferment from his clever handwork in setting up the trials. To articulate is not to say, ‘A is A’, because this repeats the same expression twice, but rather it is to say, ‘A is B, is C, is D’ (Latour 2004c, 215).

Latour (2013, 57, emphasis original) distinguishes between ‘pre-positions’ in the literal grammatical sense for marking a *position-taking*, and ‘pro-positions’ which denotes a position that is come to once the relations have been traced. Serres and Latour (1995, 106, emphasis original) propose a ‘philosophy of propositions’ which consists of two elements: first, ‘pre-position’ denotes the tracing of relations between actors; and second, ‘pro-position’ produces a map or general theory of relations. At this point in the cartography, only once I have wandered, been led by fluctuation as I ‘follow the actors’ (Latour 2005a), study their network setups, trials of strength and translate the trials, a picture should emerge, a map for which I will be able to see a general theory of relations (Serres and Latour 1995). Crucially, I do not know what these actors are or what they do at the start of the cartography because they precede any position (in the preposition sense) and only gain meaning from their relations. But once the relations have been traced, my work will be done in the way that a map of propositions should emerge. After all, Latour (2005a, 128) does say that a ‘good ANT account is a narrative or a description or a proposition where all the actors do something and don’t just sit there’. But Serres and Latour (1995) caution that even at the end of the cartography, the ‘turbulences keep moving’ and ‘flames keep dancing’, and this recognises that it is only a map which can change. ANT’s notion of articulated propositions forms part of the fifth part in the cartography of coaching in Chapter five.

Chapter summary

This chapter introduced the relationist ontology of ANT. Five Latourian ANT concepts were identified and these form part of the cartography of coaching in Chapter five for *articulating propositions* by *translating the trails* of a *trial of strength* which has been staged by coaches in a *network* of *actors*. Next, I go on to introduce how the theoretical focus of ANT became an ethnographic strategy for shaping the research design of this thesis.

Chapter four | An actor-network theory ethnography

Chapter four gives insight into how actor-network theory became an ethnographic strategy for shaping the research design of this thesis. I detail the key processes in setting up the research and ethical considerations. Then I go on to introduce the data gathering methods, which includes video recordings, fieldnotes and photographs. Finally, I set out the sociomaterial analysis giving particular attention to anecdotes and transcription processes.

Actor-network theory ethnography

An actor-network theory (ANT) ethnography allows for studying relations in their heterogeneity. ANT is an ‘ethnographic strategy’ that shapes the research design of this thesis. According to Neyland (2007) an ethnographic strategy is not a step-by-step plan but rather is a set of ideas that can be used to question, challenge, or contribute to existing research. Firstly, an ANT ethnography raises questions about the separation between social and material relations in coaching research. Observation will be used as a standalone method to overcome this separation because this is the ‘hallmark’ (MacLeod et al. 2019) of previous ANT ethnographies, where the inquirer stays within a fieldsite for an extended period (e.g., Latour 2010a). Secondly, ANT challenges the ‘anthropocentric gaze’ (Tummons and Beach 2020) in coaching research, where humans have most often been privileged as the starting point. Contrarily, the ANT inquirer remains a ‘fly on the wall’ (Latour 2010a) throughout the entire fieldwork, as this ensures that all agencies are granted an equal right to existence. Recall in Chapter three that ANT grants ‘democratic’ (Harman 2009) rights to all actors, and this means that no actor is privileged above another. My stance as a researcher is to act as a ‘spokesperson’ (Latour 1987) on behalf of the actors themselves. In practice, this means that I do not solicit the coaches or players at any point during the fieldwork; they are de-centred as the sole source of knowledge because there is a greater emphasis on the need for a human-nonhuman balance. This avoids ‘interpretivism’ (Ulmer 2017) or prevents confusion between the inquirer’s concepts of Latourian ANT (i.e., infralanguage) and the actors own fully developed metalanguage. Thirdly, an ANT ethnographic strategy can contribute to existing research by producing more faithful descriptions of coaching practices. ANT is thus able to sidestep charges of naïve realism in the way that the account that is

produced firmly on the relations of the actor-network. The contribution of all these points is what allows the ANT ethnographer's account to be robust.

Preparation for fieldwork

The preparation for fieldwork involved seeking permission from 'gatekeepers' to recruit two community football coaches in Scotland. The first gatekeeper was the Scottish Football Association (SFA), the governing body for football in Scotland. Although a relationship had already been established with the SFA from a previous research project (Maclean 2020), there had since been a change of personnel. However, I still had a desire to collaborate with the SFA because I believed that this would help to streamline the recruitment process between football clubs and the governing body of sport. Furthermore, the SFA have an extensive knowledge of community clubs in Scotland which would be crucial for the nomination sampling strategy of identifying community football clubs (see **Figure 1**. *Nomination sampling strategy*). I was put in touch with the new Director of Coaching who was keen to cooperate and was asked to nominate community football clubs based on the following criterion: three community football clubs across different regions in Scotland endorsed at the 'legacy award' level within the Quality Mark scheme. The Quality Mark scheme is a tiered quality assurance framework that sets rigorous standards to ensure community football clubs in Scotland are fit for purpose (SFA 2017). According to the SFA Annual Report in 2018, there were over 500 clubs across Scotland and 100 of them were accredited at the highest, 'legacy', and second highest, 'community' award. Given that both volunteer coaches were working in clubs at the highest level of award in Scotland, it was hoped that this would provide empirical evidence to support the professional learning of coaches at lower levels of award, as well as those not affiliated with the scheme.

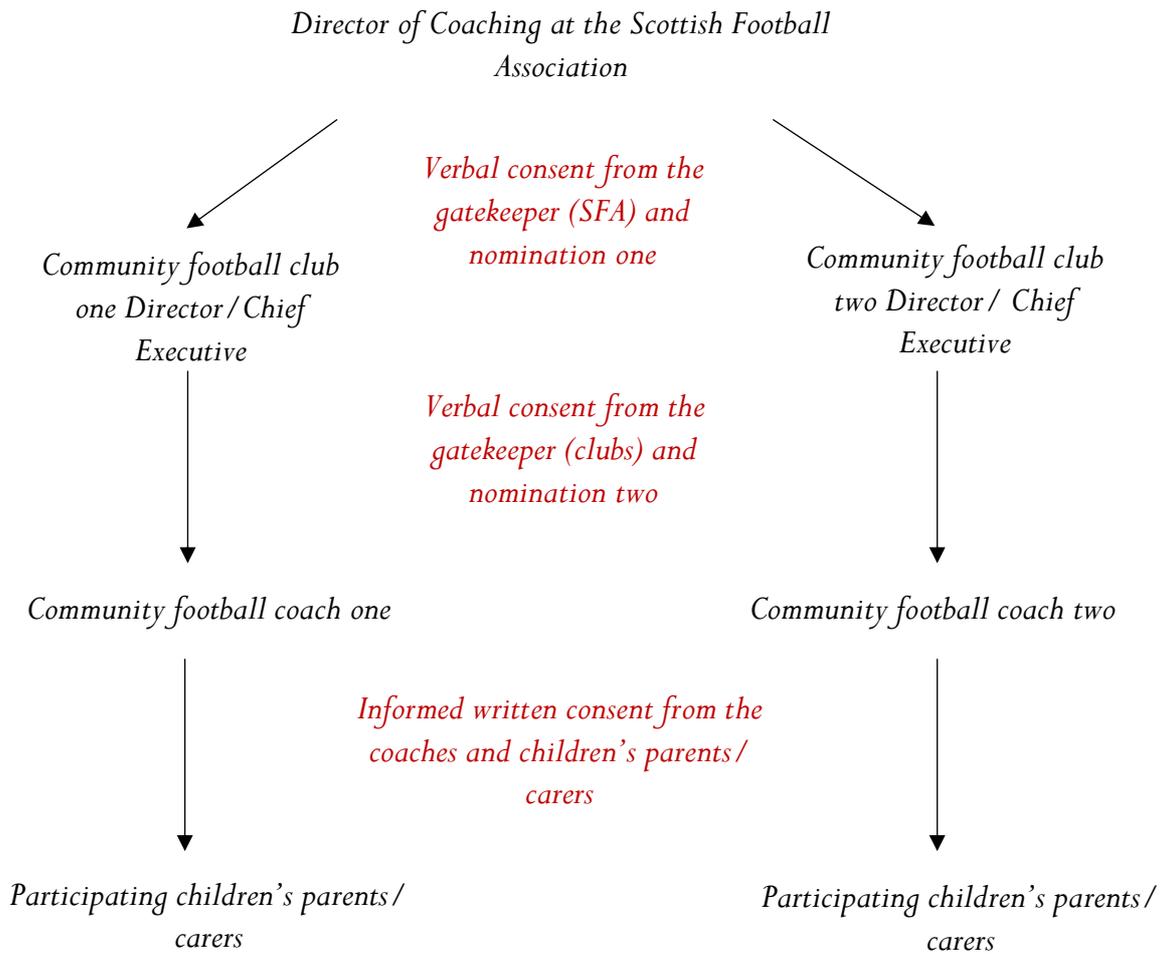


Figure 1. *Nomination sampling strategy for identifying two community football clubs and coaches*

Following the identification of three community clubs, I was put in contact with each club by the SFA in separate emails. Each club initially responded showing a willingness to be involved and subsequently a meeting was arranged with the second ‘gatekeeper’: The Director/ Chief Executive of each club. On meeting, I talked through the information sheet and proposed that I would email within a few days to confirm a response. All three clubs committed to participate at the initial meeting but only two confirmed in the follow up email a few days later. The two Directors/ Chief Executives were asked to nominate a community football coach and respective team within their club structure under the following criterion: a community football coach who coaches children/youth aged between eight to twelve years old. The criterion was considered suitable given that the highest levels of participation in sport have been reported at this age across

the UK (Sports Coach UK 2011). A subsequent meeting was then arranged with each of the prospective coaches. Instead of seeking to recruit a third club, I decided to initiate the fieldwork (October 2018) with the two clubs and monitor the extent of the analysis during the initial stages of data gathering. I first met George and Paul (anonymised) on two separate occasions when they were in the middle of a coaching practice. They were very enthusiastic about participating in the project. I recall the bewilderment on George's face when he said, "They [SFA] have chosen me for you to research?" And when Paul gathered the players in on the first night of observation he said to the players: "We have been chosen as one of only two clubs in Scotland to take part in Jordan's PhD research project". Following the Christmas break, two-months into fieldwork, I decided it was feasible to continue without seeking a third club given the volume of data gathered from the two clubs.

George and Paul are volunteer coaches and outside of coaching they work full-time in a non-coaching capacity. According to Gale et al. (2019) community sport coaches can be defined as individuals who hold a paid, part-time, or full-time, or voluntary role in delivering initiatives where sport is used as a vehicle for transforming health, education, and social policy outcomes. At the start of fieldwork, George and Paul's teams were transitioning from nine-a-side to eleven-a-side forms of football. George was in his first year of coaching the 2006s, children aged twelve years old, whereas Paul had coached the 2007s, children aged eleven years old, over an eight-year period because his son was on the team. Both coaches had completed the mandatory coach education qualifications stipulated at the legacy award level which required at least a Level 1 coaching award. The Level 1 is split into three sub levels, 1.1, 1.2, and 1.3, and are non-assessed. During the fieldwork Paul was also undertaking the Union of European Football Association (UEFA) 'B' licence accreditation, which is an internationally recognised qualification for coaching football. Paul coached his team up to three times a week with games at the weekend within the West region in Scotland. He also coached six out of seven days a week, all on a voluntary basis, and had his own dedicated coaching business outside of the club. George coached his team twice a week with games at the weekends, and they competed in the regional competitions associated with the Southwest region in Scotland.

Ethical considerations

I was granted ethical approval by the General University Ethics Panel (GUEP) at the University of Stirling on 11th October 2018. Two main ethical considerations were identified: coaching a vulnerable group and data gathering methods. Given the research involved children and young people, who are classified as a vulnerable group, prior to entering the field I obtained a Basic Disclosure certificate to satisfy the competency requirement for observing children and young people. I provided the Disclosure to both clubs prior to the start of fieldwork. I reviewed the SFA's policies and guidance related to their child protection and welfare services to ensure that the research procedures and contingencies I identified were transparent. This was essential given that sport coaches have a 'duty of care' when coaching players and especially young people (Partington 2017). I documented in my ethics application by specifying that any inappropriate practices or harmful coaching methods would be recorded, and appropriate action taken in accordance with the university and SFA's policies. The second ethical consideration was assured by gaining informed verbal and written consent from the SFA, clubs, head and assistant coaches and children's parents/carers. My first meeting with the players and parents/carers was at the end of one of the coaching practices where I explained my research, outlined ethical considerations and how these would be assured, and then issued participation information sheets and consent forms. The parents/carers took these forms home to have sufficient time to read through them and returned these to the coaches who then gave them to me at the following practice. All participating children, parents/carers and coaches gave informed consent, either verbal or written, prior to fieldwork commencing. In addition, I took the following steps to ensure that the data gathered were anonymous and confidential.

Anonymity

The coaches and participating young people were given pseudonyms to protect their identity (see club 1 and 2 details below). I gave the children pseudonyms at times when the coaches referred to a child by name during a practice. The clubs were also given a fictional name as this is consistent with previous studies in coaching research that have studied academy level clubs (e.g., Cushion and Jones 2006, 2014). I was also given permission through informed written consent by the coaches and the participating children's parents/carers for reusing the video data in producing figures alongside the written text. Procedures were put in place to ensure that participating

children and any identifiable information related to the clubs or setting were deanonymised. For example, all children's faces and identifiable information were blurred in figures.

Club 1: Léodhas football club

Head coach: Paul

Assistant 1: Jon

Assistant 2: Finn

Assistant 3: Joseph

Assistant 4: Simon

Club 2: Na Hearadh football club

Head coach: George

Assistant 1: Bill

Assistant 2: Iain

Assistant 3: Joe

Confidentiality

I put in place a data management plan to ensure consistency in handling large volumes of visual data. All the video data was transferred to my university computer and the separate files were timestamped and stored separately on an external hard drive that was securely kept within a locked drawer at my office. After each video file had been transferred it was subsequently deleted from the video camera. A similar procedure was put in place for the audio data. Several notebooks for fieldwork were stored securely at my office and recorded electronically onto my university desktop computer. No identifying information was recorded in the notebooks or the electronic fieldnotes. All visual data will be deleted on submission of the final thesis, except those figures that are embedded within the thesis. The final submission of the thesis will be stored in the University of Stirling's Online Research Repository (STORRE).

Entering the field

As I entered the field, my attention was primarily on data gathering that included video recordings, jotted fieldnotes and transcription. The sociomaterial analysis involved generating

‘anecdotes’ (Adams and Thompson 2016) which are short stories about how an actor becomes relevant (Hindmarsh and Llewellyn 2016).

Data gathering methods

Audio-visual observations took place once a week lasting approximately two hours in each club (80 hours in total) during the 2018/19 youth football club season. To make such observations possible, I relied on a few nonhuman actors including a Go Pro Hero 7 camera, sim cards, remote charging adapter, tripod, notebooks, pens, umbrella and so on.

Video recordings

As the coaches walked down towards the Field of Play with a bag of footballs and bibs slung over one shoulder and a stack of cones dangling in the other hand I, too, would gather my backpack, tripod and umbrella and make my way down towards the Field of Play. After pleasantries, the coaches would start to assemble the Field of Play by dropping cones and moving goals. I set up near to where the footballs, bibs and cones were stationed. I opened the sleeve of the tripod stand and clipped it into place. Then, I opened my bag pack, inserted the sim card into the Go Pro and locked the camera firmly in place on the tripod. A stationary video camera was chosen over a roving camera due to the fluidity of actors moving in and out of the Field of Play (Luff and Heath 2012). The video camera was portable and compact with a touchscreen allowing me to merely glance at the screen to ensure that the position of the camera captured the practice in progress. I stood behind the camera to check and see if it was recording as a red light would flash every so often, or I tapped the screen when the screen timed out to check the status of the battery.

I turned the camera on near to the start of the practice which was usually signalled when Paul or George called the players in for a brief discussion. At this point, I took out a pen and one of my notepads (‘account of the actors’) for jotting down fieldnotes. George gathered the players in a huddle at the start of every practice to reflect on their weekend game. As the players transitioned from one practice to the next, I navigated with my tripod to find a suitable viewing point. This changed in every practice that took place. However, I noticed that during the start of my observations I stood with the camera behind the white lines on the eleven-a-side pitch, whereas later in the fieldwork I moved freely around the Field of Play. Irrespectively, my tripod and I

were always placed outside of the practice areas. Having the video camera outside of the practice areas helped to minimise its obtrusiveness (Jewitt 2012). However, sometimes the video camera became obtrusive when I was referred to as “cameraman” by some of the players. This is consistent with Pink (2006) who noted that when using video cameras in ethnographic research they become part of the researcher’s identity and influence the way informants communicate with you.

The video camera also highlighted moments of disruption. Footballs frequently came close to the video camera and the coaches warned players to “watch the camera”, “keep away from it” or “the ball shouldn’t be going towards Jordan’s camera”. On one occasion, Paul sprang into action as he caught a ball moving directly towards the camera (he did say he once was a goalkeeper after all!) But just as not all balls can be saved from the goal, the camera received a few knocks of its own from stray balls. On another occasion, as a ball hit the camera Paul asked, “is it insured?” However, the camera almost became an intruder when Paul, who was getting the practice under way, told the players to “watch for Jordan’s camera”. This was unusual because the camera was still outside of the practice area and no footballs were near it, and so I decided to move to the other side, yet remaining outside of the practice area. Hopwood (2014) also encountered similar problems where the video camera did not always act to create distance from participants in his study. These moments of intrusion are important to consider for when using visual data gathering methods in fieldwork because they express how objects, such as video cameras, become ‘co-researchers’ (Adams and Thompson 2016) in the research process.

I also had to overcome some video compatibility and software storage issues when I returned from the fieldsite back to my desk. I encountered compatibility issues due to the file size of the videos which were 1.5 to 2 hours in length for each session. The video files were composed of several individual files rather than as one single file shown on the video camera. To work around this, each of the videos were grouped with timestamps and initials of the club. Software issues were then incurred after the video files had been transferred from the video camera to my computer. Initially, I had planned to use a specialist audio-visual software program, Transana, but then decided not to use it since I had encountered difficulties with the storage and quality of the videos when merging audio and video files. Given that the videos were not an essential part of

the analysis as the emphasis was on the fieldnotes, I made the decision to use Windows Media Player because it was suitable for the level of analysis I required.

Fieldnotes

When making fieldnotes, I drew sketches and grappled with the methodology of ANT by putting into practice a theory-laden shorthand: ‘actors, irreduction, translation and alliances’ (AITA). As recommended by Latour (2005a, 134), I travelled light equipping myself with ‘five tiny notebooks’: one notebook was for detailing the observations (‘account of the actors’) of which I filled several; a second for keeping track of the data (‘chronology of data’); a third for theoretical musings (‘theoretical’); a fourth for making links to research studies (‘ad libatum’) and a fifth for jotting musings of the research process. Although all five were used to varying degrees, the first notebook was the only one that was used during the fieldwork and for generating the sociomaterial analysis. In the field, I was a blatant scribe with a notepad in hand where I ‘followed the actors’ (Latour 2005a) more or less ‘contemporaneously with the events, experiences, and interactions’ (Emerson, Fretz and Shaw 2001). Both coaches were aware at the start of fieldwork that I would be observing under the proviso that note taking was not a critique of but an attempt to better understand coaching from its practices. I drew inspiration from Hopwood (2015a, 12) who provides an alternative version of critique that is not an appraisal of an individual or organisation but is ingrained in the ‘processes of questioning and deconstructing driven by a curiosity about how things might be different, or even better’. I came to understand this point by accepting that no professional practice could ever be perfect.

Fieldnotes were written in the third person where the focus of writing was on the description of the scene at hand. The writing of the fieldnotes took a jotted form in a bullet point list given my attention often shifted between different actors at any given time. I developed my own style of convention for jotting fieldnotes that was based on ease of comprehension. A bullet point introduced a new note about a particular interaction. The ‘o//’ symbol indicated a momentary pause in a passage. An ‘Obs.’ was a noteworthy ‘observation’ of something related to the practice at hand. An ‘IL’ or an interlude is like an aside for making a comment that was not necessarily related to the practice at hand. Taken together, I present a short segment of a fieldnote taken at the start of a session with Na Hearadh football club on 5th October 2018:

- Paul is speaking to Bill and asks where are the bibs? Bill does not have them, neither does Joe. Paul exclaimed that possibly Ian might have them. Paul then said it is going to be more difficult now.

o// Paul has the warmup practice set up with white cones. Other areas have been set up – red cones over near the seven-a-side goal at the far end and yellow cones near the eleven-a-side goal.

IL: I spoke to Paul before the session started as I arrived early and asked how the team got on in Oban – they won 4-1 and are through to the last 16 of the Scottish Cup. They are also five points behind the league leaders with two games in hand. The league leaders lost at the weekend.

...

Obs. Bill is now overseeing Box 2. A passing drill that consists of keeping the ball off the player in the middle.

Since it was not possible to account for all the actors at once my initial focus was on the coaches' actions. This does not mean that they were privileged as a more powerful actor than any other as this would be antithetical with ANT. Rather, it was precisely because they delegated authority to the actors at the start of practices that I followed them first. However, as passages unfolded the coaches' actions were often overtaken by other human and nonhuman actors and so my attention moved elsewhere. The jotted fieldnotes focused on three key elements: description, dialogue, and characterisation (Emerson et al. 2011). Descriptions generated a 'vivid image' from articulating the moment-to-moment interactions of the actors in any given scene. This was further aided from a second data gathering strategy where I included verbatim dialogue of the players and coaches alongside the descriptions. Dialogue captured the expressions used by the coaches and players. A fuller characterisation of the actors was enabled where I revisited the recorded data to further elucidate actions and gestures from the scene at hand.

I also drew sketches of some practices in my notebook simultaneously with writing jotted fieldnotes (see **Figure 2. Sketches**). Since there were several practices in any given session, I found

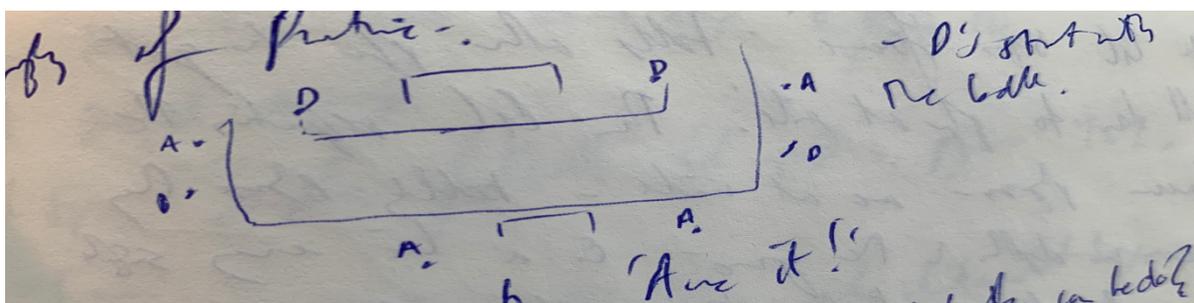
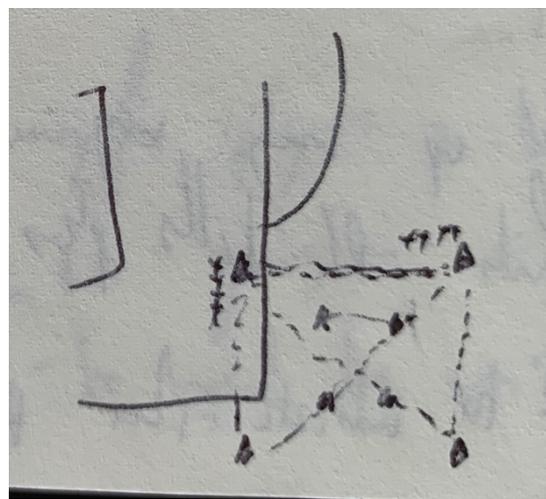
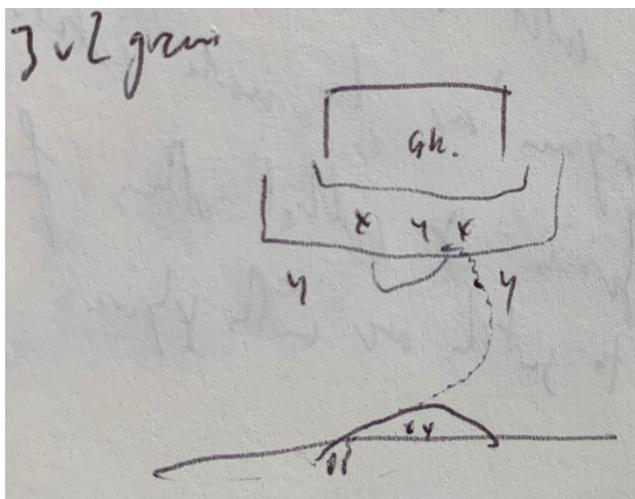
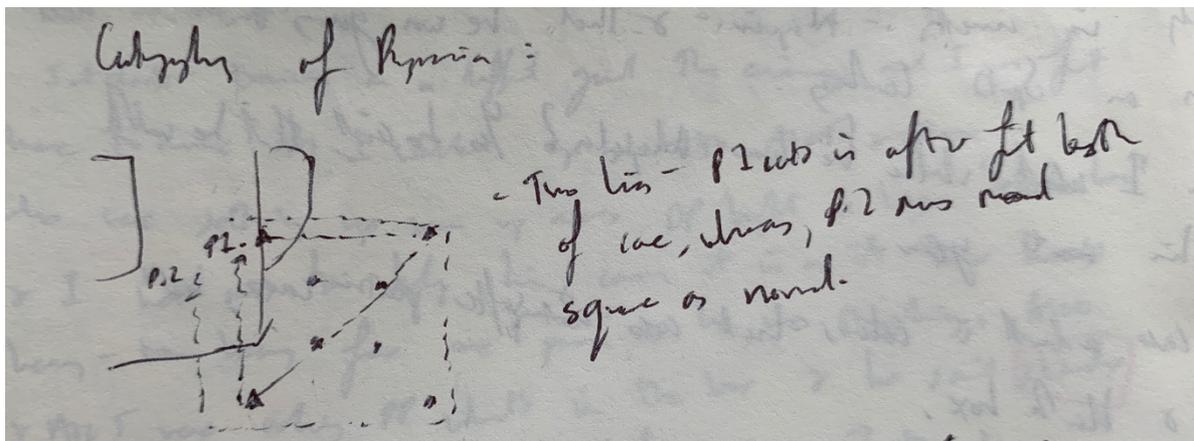
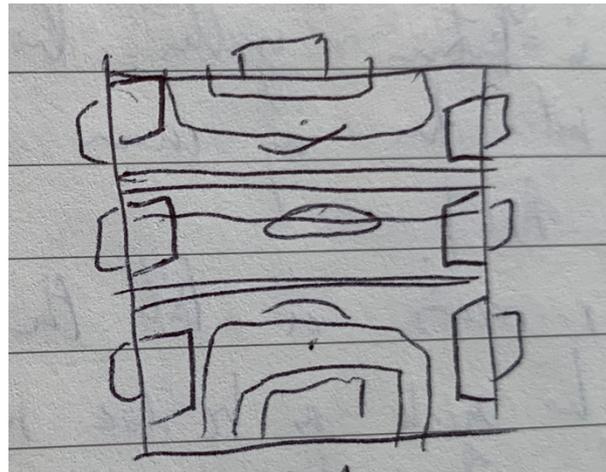
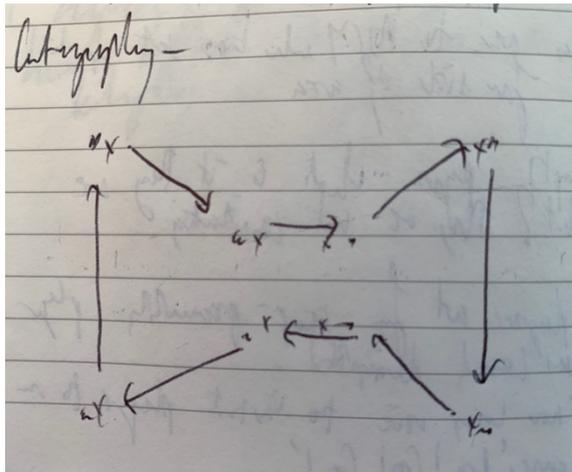


Figure 2. A selection of some sketches I made in the field of the coaches' practices

the diagrams useful in the way that they gave me a visual snapshot of the practice at that point in time during the session. In comparison with the detailed descriptions of fieldnotes, the diagrams helped me attune to the practice arrangements that might not have been discernible from a reading of the text alone. I marked my notebook during fieldwork with 'AITA' every so often while jotting fieldnotes. The acronym AITA draws inspiration from Harman's (2009) four key ANT concepts: actors, irreduction, translation and alliances. AITA was a heuristic for helping me theoretically focus on ANT while jotting fieldnotes. Actors prompted me to consider what human and nonhumans were enrolled in each practice. Irreduction reminded me that practices are not reducible to any one actor or irreducible to a certain practice but rather agencies must be described fully. Translation helped me focus on the moment-to-moment contact when actors came together (or not). And alliances focused my attention on how strong or weak the connections were between actors.

As I moved from the field back to my desk, the handwritten fieldnotes were typed on my laptop as soon after the observation when possible. Typed fieldnotes took approximately the same time to transcribe as the length of each session (1.5 to 2 hours). Although the fieldnotes were my main reference point for writing the sociomaterial analysis, they did not feature in the cartography in Chapter five themselves because they were too unruly in their jotted form. In the next section, I describe how actors became 'relevant' (Hindmarsh and Lewelleyn 2016) from jotted fieldnotes.

How actors became relevant

I was 'empirically accountable' (Lather 1986) for how actors became relevant. However, the 'symmetry' (Callon 1986) between humans and nonhumans has sparked controversy among those who have criticised ANT. According to McLean and Hassard (2004, 494) a primary challenge of ANT's methodology is 'to produce accounts that are sophisticated yet robust enough to negate the twin charges of symmetrical absence or symmetrical absurdity'. Most critical of symmetrical absurdity or, as they put it, the 'radical symmetrism' was Collins and Yearly (1992, 313) who claim that it is 'something of a conceit [as the] analysts remain in control the whole time'. They take issue with the agency of nonhumans, such as scallops (Callon 1986) and door-closers (Latour 1992), as it 'takes humans out of their pivotal role' and insinuates a certain 'complicity' on behalf of the analyst who lacks the appropriate 'scientific credentials' (Collins and Yearly 1992, 316).

Consequently, they suggest that this has led to the ‘end of epistemology’ as those who belong to ANT are too ‘chicken’ to deal with such issues themselves. However, Callon and Latour (1992, 351) respond by pointing out that they ‘did not come to this position for the fun of it or to play the deadly game of chicken’. Rather, they argue that ‘C&Y’ are stuck between the society and nature poles and subsequently are unable to ‘imagine any other yardstick’ other than a human-centred social science. Callon and Latour (1992) propose an ‘ontological manifesto’ that brings with it a ‘symmetrical vocabulary’ or a common ontology for conceptualising humans and nonhumans. They clarify their position as not giving ‘scallop voting power ... or door closers entitled to social benefits and burial rites’ (Callon and Latour 1992, 359). If this were the case then perhaps claims of absurdity would be somewhat correct, but this is far from the truth. Callon and Latour (1992) argue that by continuing to privilege the human realm is not only ignorant of nonhumans (i.e., symmetrical absence) but is ‘an extraordinary step backward’.

So, how do nonhumans become relevant in an ANT account? Latour (2004, 214) recommends ‘carry[ing] out a triage between what is expendable and what is essential’. But Hindmarsh and Llewellyn (2016) argue that the ‘relevance’ of actors is a problem given that all practices are sociomaterial. To deal with this, they offer a methodological solution by making explicit the analytical choices for how an actor becomes an object of attention. Objects become relevant from the way a member orients their conduct towards some material features of the setting they inhabit. However, whilst this overcomes the problem of symmetrical absence as objects are made accountable, they still have relatively limited agency because they are constrained by the actions of humans. This is unsurprising given that Hindmarsh and Llewellyn (2016) draw inspiration from ethnomethodology, which unlike ANT does not allow for objects to have agency. This has also been criticised in some ANT studies that still fall back on human experiences of agency (Fenwick et al. 2015). In this thesis, an actor only became relevant if they were empirically warranted in the coaching practice at hand. Next, I give insight into how a combination of fieldnotes, and video recordings generated the sociomaterial analysis.

Sociomaterial analysis

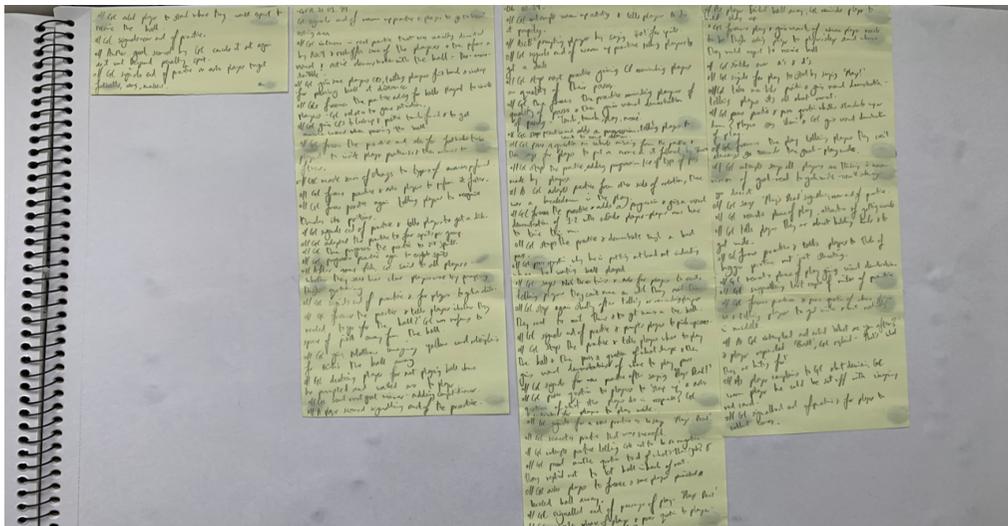
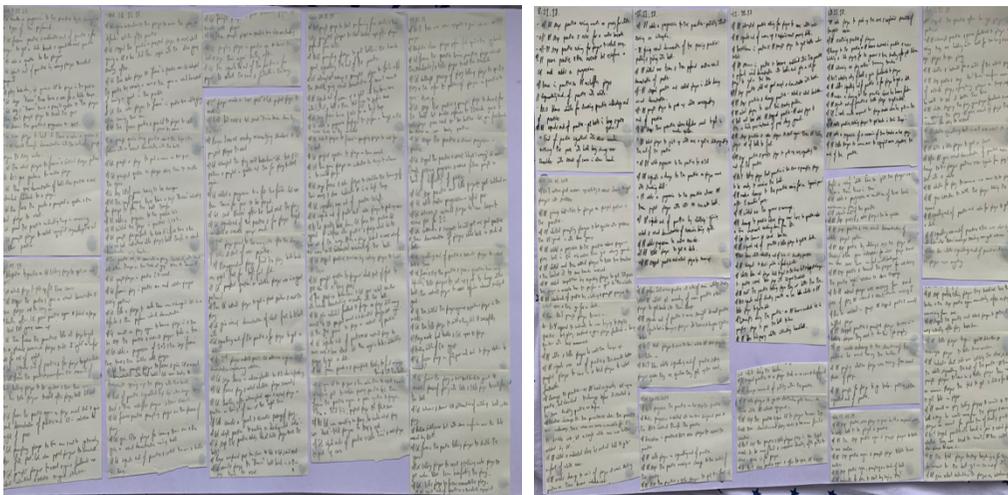
The sociomaterial analysis details how I made sense of the jotted fieldnotes and video data. MacLeod et al. (2019, 184) point out that ANT studies rarely give insight into data analysis

strategies and so this is something that I will precisely detail here. The preparation for analysis started with ‘anecdotes’ (Adams and Thompson 2016) for describing how an actor became relevant as social and material relations came together in a field of practice. MacLure’s (2013, 660-1) notion of ‘glowing’ was helpful for how an actor becomes intelligible to us in which we become interested. She gives an example of ‘a sarcastic comment in an interview, or a perplexing incident, or an observed event that makes you feel kind of peculiar’. Anecdotes were curated from a combination of jotted fieldnotes and video data in the form of a short story. Then, I looked for other similar and different instances from the fieldnotes and video corpus that could add to the overall framing of the anecdote. Each of the anecdotes later formed a ‘part’ in the cartography of coaching in Chapter five. Throughout this process, both of my supervisors acted as what Smith and McGannon (2017, 23) call a critical friend by ‘giving voice to their interpretations ... and offer[ing] critical feedback’. In what follows, first I go on to explain how each of the anecdotes were generated and second, I detail the transcription processes.

Anecdotes

Anecdotes are a literary device in the form of a short story that helps to make sense of the entanglement between social and material relations (Adams and Thompson 2016). By repositioning objects and things as serious ‘matters of concern’ (Latour 2004a), they are given a ‘central character of narrative’ (Adams and Thompson 2016, 26). Objects are not just analytic fodder but instead become a ‘heterogeneous interlocutor’ (Michael 2012) that can *speak* to us through their materiality (Sørensen 2009). In this sense, anecdotes mark an important departure from conventional humanist orientations to qualitative research. The inquirer must take an ‘averted vision’ (Adams and Thompson 2016, 29) that attunes to the relational effects of the actor-network rather than focusing on the thing or object per se so that human and nonhuman storylines can be carefully woven together. Anecdotes were derived from several data sources including fieldnotes, video data and photographs.

Two different methods were used for generating anecdotes. The first was rudimentary, as it involved writing out segments taken from the fieldnote corpus on a large blank A3 sheet of paper. What you will see on each post it note in **Figure 3** are individual entries taken from the fieldnote corpus at different points over the course of fieldwork. Each sheet is a different anecdote in-the-



BSA or GFA	Excerpt from fieldnotes	Brief justification for excerpt's link to anecdote
BSA.07.03.2019	<p>DP said, 'that's not a one-two, oranges are in!'</p> <p>Obs. As ball is played in by DP, a player controlled ball outside the area but DP said, 'play on!'</p> <p>Obs. DP says, 'balls away' and player refutes this decision and says that DP could not see it from the edge of the box and that it was on the line of the area, 'how is it out?'</p> <p>DP says to a defender to dribble past the yellow line or pass back to DP for equivalence of a goal.</p>	<p>First, the distinction between a coach and referee is blurred. As a coach by indicating it's not a 'one-two' and as the referee by telling oranges to go in. Second, a perturbation of the Laws of the Game (LoTG).</p> <p>DP taking the duties of the referee upon himself.</p>
	<p>AsCJ says, 'offside ref' and I made a SR as to who is the ref?</p> <p>As a passage of play resulted in a goal and AsCJ called it offside, DP said it was not. AsCJ says to players offside is a rule and then says, 'offside ref'</p> <p>Ball played near DP and he has controlled in game - he said he was unsure on both teams.</p>	<p>The equivalence of a 'goal' is either to dribble past the yellow line or pass back to DP. Another perturbation of the LoTG.</p> <p>Interestingly the assistant coach said, 'offside ref' (the spectral referee) but to whom? Perhaps Darren (the head coach)</p> <p>Contradiction between AsCJ, Darren and the ref (spectral) here about an offside incident</p> <p>Darren blurring distinction between player and LoTG</p>

BSA or GFA	Excerpt from fieldnotes	Brief justification for excerpt's link to anecdote
GFA.17.02.2019	<p>Obs. As ball landed near me, I passed the ball to a red player and then a green player came over and gathered the ball from the red player and said, 'it's his ball!' (or greens)</p>	<p>The player who gathered the ball used personal pronoun of 'his ball.' Luckily the player was also wearing a green bib - otherwise 'his' would have been confusing.</p>
GFA.07.03.2019	<p>o// AsCB stops the play, walks over to bib bag and gives bibs to three defenders in practice, making them visible for players to see. This also helps to show on side line to players who are the defenders</p>	<p>Previously, no bibs were used and this caused some confusion as to who were the defenders or the attackers.</p>
GFA.27.03.2019	<p>Obs. Interesting as two players who are standing on orange cones are as immovable as the cone itself</p>	<p>Cones are used to mark the areas on the coaching practices. But watch, the players can become as immovable as cones if there is no differentiation!</p>
GFA.24.04.2019	<p>o// GC said 'freeze' thrice as ball was not played through gate and GC tells player to play the ball 'sharp' and 'through the gate'</p> <p>White cones have been displaced on another occasion, but have maintained their form. Although, the pass through will be difficult as the shape has become altered. Obs. Another</p>	<p>As 'gates' were delegated to in taking the place of goals. The equivalence of a goal is passing or dribbling the ball through the gate.</p> <p>White cones (gates) have become displaced, but their essential properties as a cone has remained stable. But it has changed the configuration of the gate (as a goal). But cones</p>

Figure 3. Generating anecdotes: On the left is a pen and paper method, and on the right, an electronic version

making. The process of forming an anecdote came about from how each of the individual entries materially *speak* to how the data “glows” (MacLure 2015). The overall framing of the short story gained material significance by selecting, grouping, and organising multiple fieldnote entries across several practices. Once fieldnote entries were selected, I then wrote each individual fieldnote entry on an A3 sheet of paper. Entries were selected only if the fieldnote *spoke* to the anecdote that was being developed and this was, as Gherardi (2009) said, a matter of “taste”. The entries were then grouped together from their similarities and differences. The organisation of the short story consisted of describing the actor that glowed from the fieldnotes using verbatim dialogue of coaches and athletes and was augmented with the video data and photographs.

The second method for generating anecdotes was a more sophisticated electronic version with which I could more easily collate and analyse fieldnote entries (see **Figure 3. Generating anecdotes**). In this version I could more easily keep an accurate log of each club’s fieldnote entries that are specific to the time when the practices took place. I also added a justification for the relevance of each fieldnote entry to the anecdote. Once the story of each anecdote had been constructed from a ‘glowing’ moment in the field (MacLure 2013), the anecdotes were reordered and arranged into ‘moving parts’ as seen in the specific ordering in the cartography of coaching in Chapter five.

I now go on to discuss the specific order for how the anecdotes were developed over the course of fieldwork. An actor became relevant (Hindmarsh and Llewellyn 2016) as I continuously *bumped* into them either when in the field or whilst revisiting the fieldnote and video corpus. Rather than starting with the human as in conventional humanist qualitative inquiry (St Pierre 2011), the ball became an object of relevance. On closer inspection, I noticed how the players were particularly drawn to the ball and how the coaches frequently stopped practices to move the players back into their positions, usually away from the ball! This was a recurring issue in some of the practices that I also noticed in the video data. To articulate the agency of the ball and its relationship to the players’ positions, I drew inspiration from Serres’s ([1980] 2007) theory of the ‘quasi-object’ which captures the agency of the ball in connection with players. The notion ‘seduce’ was also relevant, for when players are led astray from their position to be the quasi-subject or the subject

of the ball (Serres [1985] 2019). Although identified as the first anecdote, the quasi-object was the third part of the cartography in Chapter five.

The second anecdote was produced from my subsequent interest in the different practice arrangements that the coaches set out on the Field of Play. I began to recognise the agencies of other actors that became enrolled in coaching practices, such as cones, bibs and goals. To help elucidate the materiality of these agencies, I drew inspiration from ‘delegation’ (Latour 1999c) for precisely detailing how the coaches delegated authority to different actors in a field of practice. Delegation was the second main part of the cartography in Chapter five.

The third anecdote came about as I noticed that the coaches often stepped into passages to give feedback to the players. I was particularly intrigued when the coaches were called into action, as they often did so in peculiar ways, such as blowing a whistle or shouting out “freeze”. I then noticed how some actors were disruptive, such as balls or cones, and so I decided to group these under interruptions. Incidentally, I had already been noting moments of when an interruption occurred during fieldwork before this became an anecdote. Interruptions were the fourth part in the cartography of coaching in Chapter five.

The fourth anecdote came about when I realised the ‘strangeness’ (Neyland 2008) of my *being* on the Field of Play. I noticed that I prudently kept the camera behind the white lines on the pitch while recording, but I started to move more freely on the Field of Play as the fieldwork progressed. This strangeness made me think about how the Field of Play became transformed as coaches moved from The Game towards a field of practice. Although identified here as the fourth anecdote, it was the first part in the cartography of coaching in Chapter five.

The fifth anecdote was brought about from a memorable comment by Paul which occurred quite early in the fieldwork, but I did not know the full extent of its meaning at that point in time. Paul intervened after an interruption and used the term “manufactured” to describe the attacking versus defending practice. I was immediately intrigued by the word ‘manufacturing’ and my inclination was reaffirmed after a close reading of Latour’s first book related to the construction

and fabrication of scientific facts in laboratories (Latour and Woolgar 1986). The fifth anecdote was also the fifth part in the cartography of coaching in Chapter five.

Transcription

The transcription in Chapter five consisted of taking ‘speech which is fleeting, aural, performative, and heavily contextualised within situational and social contexts and freezing it into a static, permanent and manipulable form’ (Lapadat 2000, 204). In this process of reifying speech into a textual account I made several decisions about what talk to include and how to represent it. In comparison with the fieldnotes where I tried to capture as much detail as possible from the unfolding passages, I was much more selective for what was, and was not, included in the cartography. Parts of the fieldnote corpus that formed anecdotes were reviewed in the video data to verify the verbatim talk of coaches and players. Mostly, the transcription consisted of text, but I also included figures in some of the parts in the cartography. Reviewing the video recordings helped to corroborate the sayings and doings of coaches and players from the materiality of practices. For short segments of text, less than two lines, the transcription flowed with the rest of the text, whereas for longer exchanges, three lines or more, the transcription was separated and indented from the text. The transcription was based on standard orthography and punctuation with the omission of intonation and interruptions to promote ease of readability (Lapadat and Lindsay 1999). This is also consistent with the transcription of previous ANT analyses where the focus has been on the re-presentation of talk in a reduced written form (e.g., Latour 1996, 2010a). However, this is not to say that nonhuman actors did not have a role because the coaches under study often spoke on behalf of the materiality of nonhuman actors.

Chapter summary

This chapter gave insight into how the theoretical focus of ANT became an ethnographic strategy that shaped the research design of this thesis. The key points of an ANT analysis can now be articulated: actors become relevant (Hindmarsh and Llewellyn 2016) as social and material relations comes together in practices (or not); anecdotes (Adams and Thompson 2016) illustrate the sociomateriality of actors taken from fieldnotes, video data and photographs; and Latourian ANT offers a theoretical corpus for developing a conceptualisation of coaching. Taken together, the ANT ethnography inspired the five moving parts of the cartography of coaching.

Chapter five | A cartography of coaching

Chapter five presents a cartography of coaching based on the fieldwork carried out in two community football clubs in Scotland. The rationale for a cartography is because sport coaching does not have a map that is truthful to the territory of its practices. As shown in Chapter one, materials and materiality are absented in previous conceptualisations of coaching, as they are taken to be extraneous to practices. Consequently, previous methods and methodologies are unable to capture the ontological dimension of what things *do* in practices because they privilege the voices of coaches and actions of athletes. However, the cartographic method proposed here does not privilege any one actor over another in the way that the social is kept entirely flat, which means that the distribution of human and nonhuman agencies can be articulated (see Chapter three). The cartographic metaphor is inspired from the development of Western cartography during the Renaissance that enabled international trade and territorial conquest (Latour 1987). In this study, cartography is used for generating a “map” of coaching that can act as a navigational tool for conceptualising practices.

The cartography derives from the sociomaterial analysis that combines fieldnotes, audio-visual recordings and figures. An actor became ‘relevant’ (Hindmarsh and Llewellyn 2016) in the field as social and material relations came together in practices. An ‘anecdote’ (Adams and Thompson 2016), which is a short story about how an actor becomes relevant, was then developed from a combination of the fieldnotes and video data. I then moved from the description of each anecdote towards an interpretation of how they formed a ‘part’ in the cartography of coaching, but this was only apparent once all five anecdotes had been developed. It is not expected that other coaches will follow the cartography in a linear fashion (i.e., from one to five), as the first anecdote was the third part in the cartography (see Chapter four). The cartography provides a map for helping coaches move through their practices but recognises that how the map is described and interpreted will be different for every coach, because practices are mobile, messy, and never the same.

The cartography has five moving parts which are specific to the peculiarities of coaching: (1) moving from The Game towards a field of practice, (2) delegation, (3) quasi-object, (4)

interruptions and (5) manufacturing. Each part is accompanied by an analytical move that is associated with a Latourian ANT concept introduced in Chapter three: actors, network, trials of strength, translation of trails, and articulated propositions. Each move is a way of speaking about the part of coaching. If I am to succeed with the cartography, I must be able to convey how coaches move from one part to the next. Following the five loops of **Figure 4**, the cartography first starts with human and nonhuman *actors* moving from ‘The Game’ towards a field of practice. Second, coaches delegate authority to the actors in the form of *network setups* or specific practice arrangements. Third, the actors become defined through *trials of strength* as they circulate in passages. However, coaches might be called into action with the onset of a discontinuity when players become ‘seduced’ (Serres [1980] 2007) or led astray by the player in connection with the ball (quasi-object) to be the subject of the ball (quasi-subject). Fourth, coaches then *translate the trails* by recreating an interrupted passage, giving an alternative, or starting the passage anew so that the practice can return to continuity. Fifth, the cartography of coaching is manufactured where it is at once constructed and fabricated by coaches who *articulate propositions* to coach well.

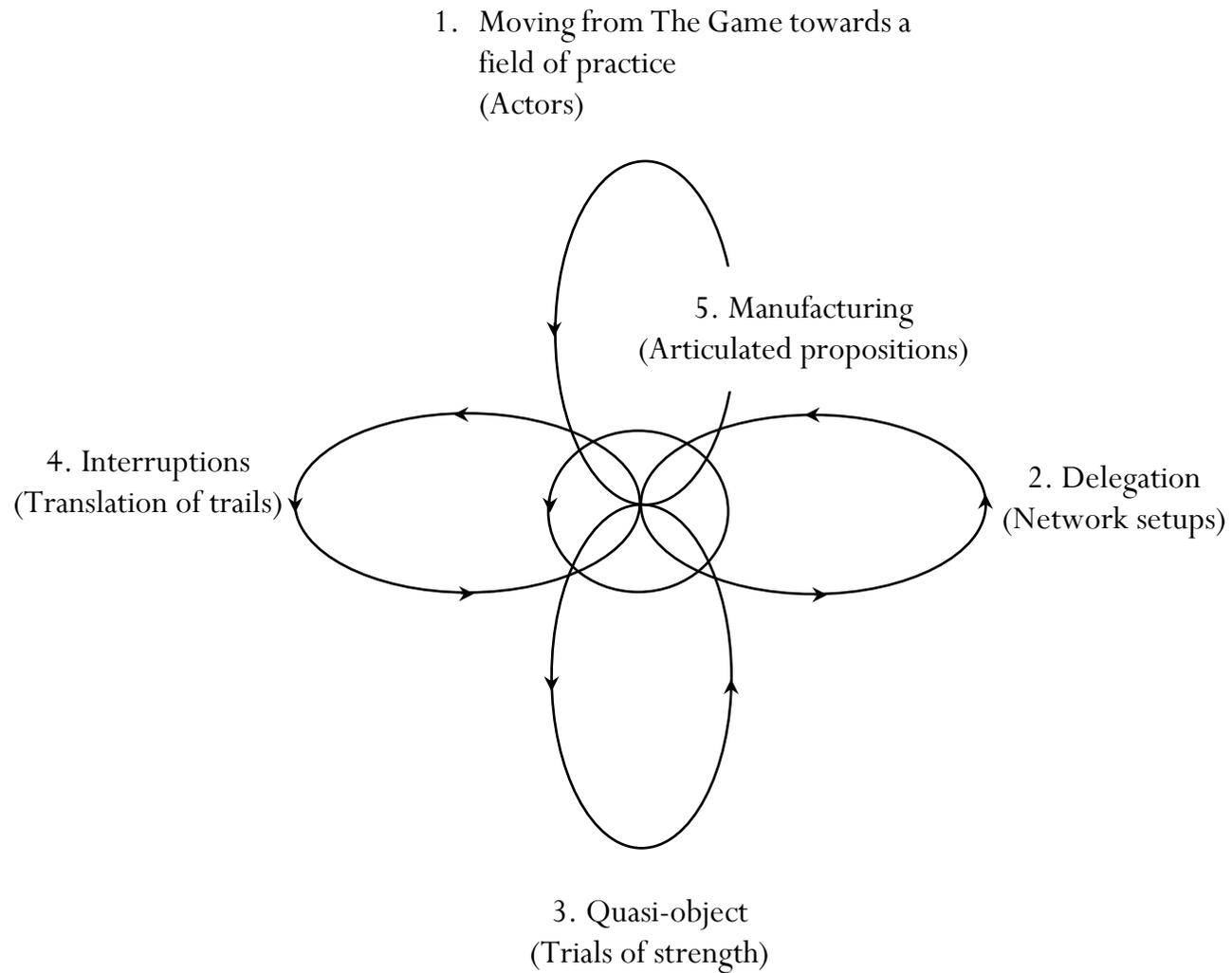


Figure 4. *The five moving parts of coaching: five moves in which each part is considered as important as the others, and each feed back into itself and into the other four. Manufacturing (fifth part) is situated in the middle like a central knot tying the four other moves*

Move one (actors): moving from The Game towards a field of practice

The cartography starts with a 'displacement' (Bloomfield and Vurdubakis 1999, 627) as we move from 'The Game' towards a field of practice.



Figure 5. *The Field of Play*

An anecdote of my first impressions of the Field of Play

You might assume in **Figure 5** that the team huddled will quickly disperse into their positions in preparation for The Game against the other team in the distance near the other eleven-a-side goal. And the other people standing near the side-line might be spectators or parents. For, you can decipher the eleven-a-side pitch from the white lines marking some of the areas on the Field of Play: six-yard box, eighteen-yard box, side-lines, by-line and, of course, the two eleven-a-side goals. There is also one ball on the Field of Play which is consistent with the Laws of the Game (IFAB 2019). But don't be fooled! This is the very start of a coaching practice where the coaches gathered the players in for a discussion on the Field of Play. On first impressions, the eleven-a-side pitch appears to be like the Field of Play. The floodlights illuminate green artificial grass with white markings and two eleven-a-side goals. Lines meet lines: side-lines, goal-lines, centre point, penalty spots, six-yard and eighteen-yard boxes. I continue walking with my bag and tripod case slung over my shoulder to where the coaches are located and greet them with a handshake and pleasantries. I place my things down near a bag of balls, cones, and a shopping bag of bibs. I open my bag pack removing the tripod from its sleeve extending and clipping it into place. I unzip the GoPro from its case and mount it to the tripod stand. I grasp the voice recorder and slip it into my jacket pocket to ensure a quick handover to the coach before the start of the session. I then take my notebook and a pen out from my bag. I am all set to go. At this point, I notice some players are arriving, kitted out in football attire: a t-shirt and/or jacket, shorts, socks, and football boots. Some of the players greet the coaches or go straight to the ball bag, taking a ball out and start passing with another player or shoot towards a goal. But I suddenly notice that this is not an eleven-a-side goal. Although similar aesthetically because it has a white frame and net, it appears to be a much smaller seven-a-side version of The Game. And then, I notice several of these goals located across the perimeter of the Field of Play. While this is happening, Paul and George clutch a bundle of cones under their arms and drop them down onto the Field of Play. But I ask myself, "what are *they* doing on the Field of Play?" A double displacement as coaches are usually forbidden on the Field of Play and cones remain absented in the Laws of the Game. After Paul and George call the players in to start the warmup, I realise we are not alone. Other groups of coaches and players also occupy the Field of Play. We are located on one third of the pitch, marked with additional yellow and white lines further dividing the Field of Play into multiple fields of practices. For what is usually only eleven-a-side consisting of two teams with one ball and a referee has now

become split into three thirds with up to 80 players and just as many balls, bibs, and cones. There was no toss of the coin either. The third of the pitch we are standing on is located at one end of the Field of Play from one goal line up to a double yellow or white line that is in-between the goal line and the halfway line. This third consists of an eleven-a-side goal, a six-yard box, an eighteen-yard box, two corner points and a double yellow or white line. Are these double yellow or white lines now a by-line as they are opposite to the eleven-a-side goal? Or perhaps they are a side-line if the other seven-a-side goals are used? And is the ball out if it passes this double yellow or the white lines? Does it not remain on the Field of Play? Maybe so if it was The Game. But surely one cannot play The Game in this third of the Field of Play! Certainly not according to the Laws of the Game. I am now in uncharted territory, the Field of Play no longer.

The 'immutable' laws of The 'mobile' Game

There is a certain formalism or rules for how The Game is *The Game*. According to Kretchmar (2015) formalism in sport is predicated on the Laws of the Game and one simply must follow Game rules. Each law entails classifications enforced under certain situations intended to be universally applied across the world at all levels of organised sport. The Laws of the Game are governed by the International Football Association Board (IFAB 2019). The seventeen laws can be summarised as follows: The Game takes place on a Field of Play (law one) with a ball (law two), a certain number of players (law three) and equipment (law four). Games can only be played under the jurisdiction of a referee (law five) and other match officials (law six) who ensure that the spirit of The Game is upheld. The Game is ninety minutes (law seven) consisting of two halves (law eight), irrespective of how many times the ball goes out of play (law nine). The Game is determined by the number of balls scored in the goals (law ten) so long as the player is not offside (law eleven). Contra to the spirit of The Game, if foul play occurs (law twelve), the letter of the law can be applied where teams can be awarded free-kicks (law thirteen) or a penalty kick (law fourteen) depending on the whereabouts of the foul. If the ball goes out of play at the side-lines a throw-in (law fifteen) is taken by the team not in possession at the time the ball was played out. If, however, the ball went out at the by-line the team not in possession receives either a goal kick (law sixteen) or a corner (law seventeen).

The Laws of the Game have a distinctive language and ordering in this articulation. Laws are separately classified and ordered and are like what Latour (1987) calls an ‘inscription device’. An inscription device in scientific practice is an instrument, no matter its size, nature, or cost and provides a visual display of any sort in a scientific text (Latour 1987, 67-68). The laws, in the form of a 246-page document of text and figures, provide an inscription for The Game. For formalism to be upheld, only those who follow the laws can be said to be playing The Game. The laws, which appear relatively stable in a materialised form, then become transformed in the embodiment of the mobile Game. The Game stops at the letter of the law for better or worse; better since the Laws of the Game ensure a level playing field as no one is above the law, or worse because at each moment the letter of the law is applied the Game becomes less mobile. Here, we catch a glimpse of a tension between mobility and immobility. In their enacted form, laws become unsettled, negotiated, and uncertain. Take a stoppage that interrupts the flow of The Game. The decision to stop The Game is subjective and negotiated ‘in the opinion of the referee’, who balances the spirit (ethos) and the letter (literal interpretation) of the law (Jones and Fleming 2010). In other words, the referee, who is the appointed spokesperson for the laws, is caught between an immutable law and the mobile Game. Although the laws are supposed to act in the spirit of a flowing Game (Colwell 2000), formalism might come undone if the Laws of the Game are violated (Kretchmar 2015). Laws can also change to compensate for The Game. For example, in contentious cases such as law eleven, laws can be tinkered with leading to new inscriptions for how The Game is played. Since the introduction of the laws in 1863 three laws have been added (FIFA 2019) and twelve classification law changes were made from the previous year (IFAB 2019). But members associated with the IFAB must be convinced a change in the laws is necessary.

As we begin to move from The Game towards a field of practice, I came to realise that there are no such laws of coaching but only the actors themselves. The Game has immutable laws which act as an external referent for the eleven-a-side pitch, but there is no such external referent for coaching. Is it any wonder that the coaches I mentioned in the anecdote at the start of this thesis might facilitate the participation of sport, like playing The Game, or why Camp Football superimposes practices within the eleven-a-side pitch, or why the children asked me on several occasions “when can we play games?” First, without laws as an external referent coaches are forced to start anew for all the *games* that they do. This is not to say that these coaches think that

coaching is The Game because games can take many different forms (Park 1998, 146). Rather the emphasis on facilitating the participation in sport, like playing The Game, might be seen as only coaching in a limited sense. Returning to the etymology of the term ‘coach’, coaches guide or train athletes (Online etymology 2020), and this means that there is a difference between facilitating the participation of sport and practices. Second, by superimposing practices within the eleven-a-side pitch gives the impression that coaching is seen as merely an instrument or tool of The Game. Third, talking of games might lead to confusion in language between The Game and coaching.

Who and what actors do I follow? I cannot use the Laws of the Game as my external referent. I will, in the parlance of ANT, ‘follow the actors themselves’ (Latour 2005a), where the actors I come to identify will be the new ‘chains of reference’ that allow me to start to talk of coaching as its own field of practice.

Perturbing the Laws of the Game

Whether deliberate or not, the coaches arranged practices in areas that are conventional or convenient. Sometimes the coaches tried to mimic the Field of Play as far as possible. For example, a shooting practice by George simulated the Field of Play to a certain extent, as it involved an initial passing sequence resulting in a shot towards the eleven-a-side goal with a goalkeeper, followed by a second sequence involving a cross from the wide areas into the eighteen-yard box. The shooting practice is conventional from the arrangement of the practice which included an eleven-a-side goal, a single ball, a goalkeeper, wide players who crossed the ball and on some occasions a defender. Perhaps even more conventional than the shooting practice is an attacking versus defending practice by Paul because there are two groups (defenders versus attackers) with no routinised sequences.

At other times, the coaches set up their practices conveniently using the lines on the eleven-a-side pitch. For example, in several iterations of what became known by George as the gate game, the white lines marking the eighteen-yard box are used as the perimeter for the practice. Although a single ball is enrolled at any one time, there are three teams (not two), and a line of cones are placed down the middle of the eighteen-yard box which transformed it into two boxes (not one).

The white lines marking the eighteen-yard box are used conveniently and not for conventional purposes because the eleven-a-side goal is excluded, yet still present as the ball circulates. In other words, the focus is not playing in the eighteen-yard box on the Field of Play but rather passing and moving the ball in a field of practice. This is captured on one occasion when George's assistant coach enrolls balls from the mouth of the eleven-a-side goal which is not only unconventional, as he was not the goalkeeper, but it is also inconvenient in the way that players often returned the ball with force! In another wall player practice, George used one of the perpendicular lines of the eighteen-yard box as a midpoint separating between two groups of three players. Paul often subdivided his third of the pitch in two halves or three thirds and organised each group of players in one of the halves or thirds and rotated the groups round during the session. For example, Paul set up another variation of the attacking versus defending practice, but this time using a seven-a-side goal on a much smaller scale, while, at the same time, his assistant oversaw another practice taking place on the other half of the third of the pitch. When Paul divided his third into a third, there are three practices taking place simultaneously: a three versus two, a shooting drill using the eleven-a-side goal and a possession practice. The multiplicity of practices that can take place at any one time denotes a displacement on the Field of Play (see **Figure 6**. *A field of practices*). Indeed, I noticed that there are no referees to uphold the Laws of the Game. Consequently, the coaches took on some of the duties of the referee and even occasionally blew a whistle! On one occasion, the agency of the blown whistle had the same force like in The Game. As one of the assistant coaches called out a "handball" the practice continued without interruption but then, after the whistle is blown, the ball immediately comes to a halt. However, the coaches often found themselves in an awkward situation when coaching because they do, after all, wear the same emblazoned badge on their jackets as players. When controversial decisions arose, both players and coaches call upon what I call as the 'spectral' referee during practices. Spectral, because it was most often ambiguous who the referee was. For example, as George blatantly pulled a player back in the gate game, his assistant coach retorts, "he [the referee] wouldn't agree with that!" Or during a different passage in the gate game, two of George's assistant coaches shout, "handball referee!" Indeed, who they are calling 'referee' here remains unclear as moments earlier George said while looking at one of his assistant coaches, "pulling him ref". The ambiguity of George and his assistant coaches in calling upon the spectral referee signals a disorientation in moving from The Game towards a field of practice. On another occasion during a nine versus

nine Game Paul says, “c’mon ref”, and then shortly after awards a free kick. The initial call for the referee reiterates the confusion in moving from The Game towards a field of practice. Awakening to the absence of the referee, Paul realises he would have to administer the free kick (law thirteen) himself. The realisation that we have moved away from The Game becomes clear in an encounter when one of George’s assistant coaches calls out a “foul” five times, followed by a player retorting, “c’mon, its training man”. The reference to training is consistent with the definition of coaching to train or guide athletes but, perhaps, more intriguingly, there is an indication that fouls should not be penalised in practices.

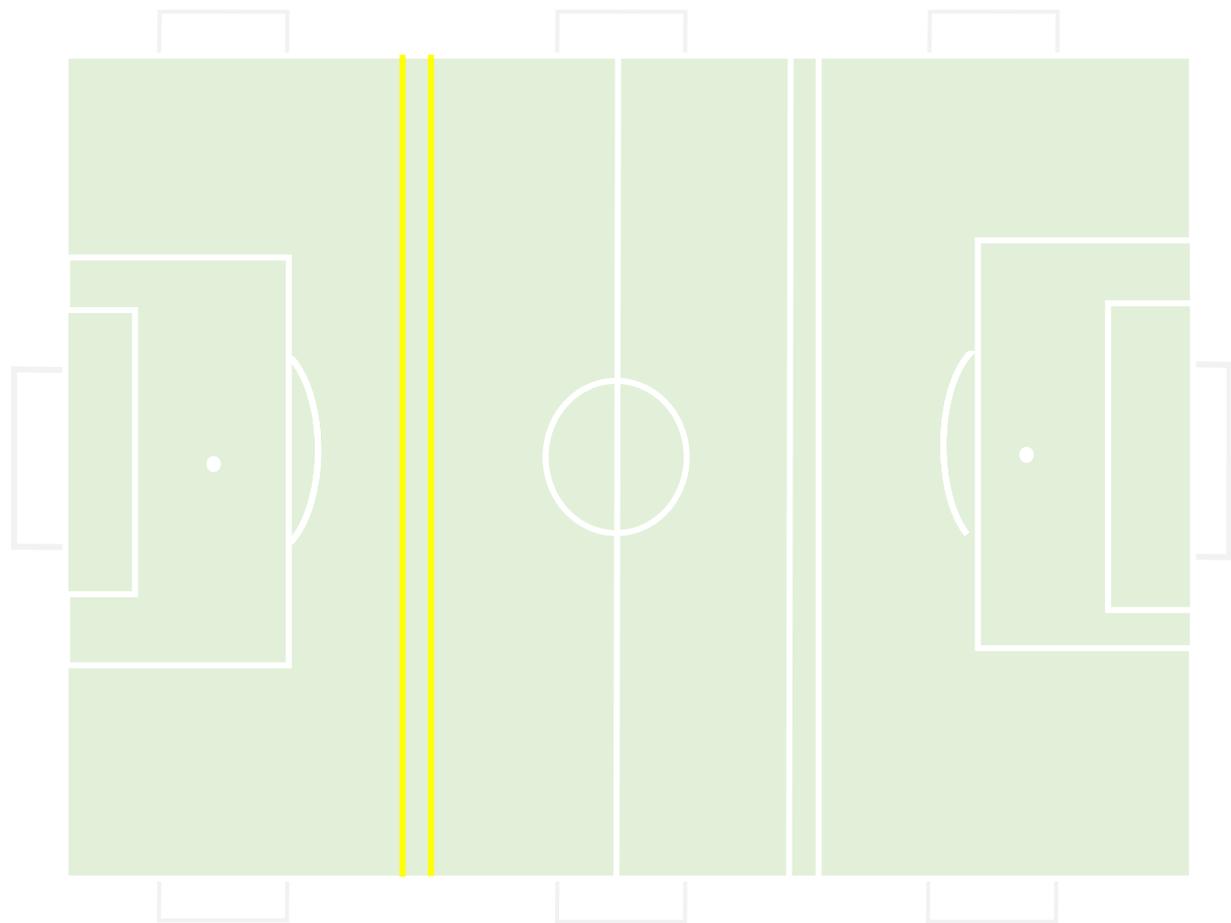


Figure 6. *A field of practices: Notice the double yellow/white lines (both clubs had either or), and the multiple seven-a-side goals around the perimeter of the pitch.*

Adding to the confusion, the coaches often moved between the letter and spirit of the law which often sparked controversy. For example, during the gate game there is ambivalence to whether a ball is “out of play or not” (law five). The ambivalence is due to the ball going beyond the eighteen-yard line which is the boundary of the practice area. There would have been no such hesitation in The Game and play would have continued but it is easy for one to lose their bearings as the Field of Play becomes displaced when moving towards a field of practice. Continuing from this occasion in the gate game, the ball is called out by George. But when the ball is controlled outside of the area by a player on another occasion, George signalled “play on”. A defender complained to Paul when he awarded the attacking team a corner in an attacking versus defending practice. Shortly after, Paul made another controversial decision in awarding the attacking team a penalty. But there is no marking for the penalty spot because the practice is taking place on a third of the pitch using the seven-a-side goals. A defender, who disputed Paul’s decision, is then warned that he might be “sent off”. But what does it mean for a player to be sent off in this field of practice? In a similar encounter, George warns the players not to be involved in any “confrontation during The Game” or they would be “straight off” because the players must understand their “jobs”. Here, the Laws of the Game went beyond the jurisdiction of the referee. For example, Paul punished a player by issuing a “yellow card” for kicking the ball away in frustration. But there is no referee present to administer the *real* yellow card and to put the player’s number in their notebook. In other words, the yellow card is not present. Instead, the reference to a yellow card comes in the form of what Harman (2018) calls a ‘sensual object’; existing only as a correlate of some real object that has real qualities (Harman 2018, 157-161). So, has a yellow card really been administered? Not according to the Laws of the Game because coaches do not administer yellow cards. But, rather intriguingly, even though the yellow card is absent the player did not refute the caution. Spoken language is enough without the yellow card necessarily being present. However, if Paul had said ‘green card’ this might have produced a different reaction by the player demonstrating that the yellow card still has epistemic validation.

The coaches *added* their own unwritten rules to the practices they invented that are not specifiable to the Laws of the Game. For example, Paul arbitrarily cancelled out a goal as a player had gone “beyond the penalty spot”. According to the Laws of the Game, the goal would stand so long as the player is not judged offside by the linesman. But linesmen, too, are absented in this field of

practice. In another conditioned game of two touches, the ball is at the centre of controversy because two of Paul's assistant coaches quarrel whether it is a goal or not as the player appeared to shoot on his first touch when he ought to take two. In another attacking versus defending practice, the equivalence of a *goal* in The Game is adapted in the way that the players are required to dribble past a yellow line of cones or pass the ball back to George. The formalism of The Game is also noticeable when a player kicked the ball from a throw in and one of George's assistant coaches asks, "what are you doing?" This raises confusion as to how little or much the Laws of the Game should carry over into the field of practice. The coaches seemed to be caught up in wanting to uphold the spirit of The Game. For example, George's assistant coach tells the player "no sliding" after they slide in an attempt to get the ball. In another more controversial instance, Paul spoke one to one with a player who made two bad tackles saying, "he couldn't do that". But I noticed inconsistencies in unwritten rules, as in another practice the emphasis was on intercepting the ball from the opponent by sliding. At other times, the coaches blurred the referee-player distinction altogether when they enrolled themselves in some of the practices. For example, George still made decisions as the referee on whether the "ball is out" or to "play on" while playing in the gate game. Not only that but he also played on both groups which is, perhaps, his way of remaining impartial. For example, George received the ball from a player in one group and then lost possession, but he then subsequently called for the player from another group to pass the ball! George could pass and receive the ball from any of the players. But if the players had not worn bibs, then it would have been even more confusing. How would players know who to pass too? Here, bibs differentiate the players into different groups (not teams) which is particularly important during practices for keeping possession of the ball in your group and not the other. Bibs also become transferred between players and coaches in practices. In a possession practice, the players in the middle are momentarily "holding bibs" until they intercept the ball from an outside player who were in possession of the ball, then a transaction of giving and taking bibs takes place between the players. Contra to the Field of Play where referees are expected to be impartial and interfere with The Game as little as possible (Kretchmar 2015), here the coaches perturbed the Laws of the Game when they moved towards a field of practice.

Conclusion: from actors to network set-ups

The Laws of the Game become perturbed when the Field of Play is displaced by coaches with cones, balls, bibs, lines, and goals (the new chains of reference). Although there are no laws of coaching, the coaches, who were in the guise of a referee, added unwritten rules when they move towards a field of practice.

Move two (network set-ups): delegation

The next move considers network set-ups, or the specific configurations the actors take in coaching practices.

Zones of cones

Cones dotted on the Field of Play are delegated with authority by coaches with the task of marking the boundaries of practice areas instead of the white lines on the eleven-a-side pitch. Coaches delegate authority to cones to discipline players to stay within practice arrangements. This is a spatial shift in the way that the marked cones designate different practice arrangements which marks a distinction with the Field of Play. In what follows, I articulate the network setups or specific configurations cones take in some field of practices.

Cones are most often arranged on the Field of Play prior to the start of coaching practices. Starting from the warmup, George and Paul often performed similar practices consisting of sprints in two to three lines of cones. In such instances, the markings on the pitch and a verbal cue are often enough information for the players to get on with the practice. While players performed the warmup between lines of cones, George and Paul frequently prepared other areas on the Field of Play mobilising cones, bibs, balls, and goals. On one occasion, Paul took some bibs out from the bib bag and placed them down on the Field of Play. Then, Paul and his assistant coach moved the seven-a-side goal, splitting the third of the pitch in half. On another occasion, Paul split the third into a further three thirds where one third a three versus two, another is a shooting drill into the eleven-a-side goal, and a final third possession practice. Paul ushered the players into a third and gave instructions to the coaches who were overseeing the other two practices. George also frequently organised other areas while the warmup was in progress. For example, George placed down ladders, hurdles, and cones on the Field of Play, while on a different occasion he set up two areas including two circles of blue and white cones and a line of cones down the middle of the eighteen-yard box. Over time, I attuned to the locality of practices from the marking of cones on the pitch. The arrangement of cones is not only an indicator of the next practice but also gave me an indication for where I should position my camera.

Only once zones of cones are arranged were players then inducted to the practice. Cones designated where players are located within the locality of a field of practice. For example, in an eight-stage cone-to-cone passing and moving sequence, the arrangement of cones gave the players an indication of where the players and ball are passed to and from in the sequence. There is an assumption that the players will pass and move in the correct sequence, like a drill-like formation. At one point when balls were “flying everywhere”, George told the players to “get the ball under control”. In other words, the players did not pass the ball cone to cone as balls moved outside of the practice area. In another attacking (two) versus defending (one) practice, cones marked only the players’ starting position. Even without the markings of cones in the passages, the ball gives coaches information in relation to the players’ movements. For example, after an unsuccessful attack, some of George’s assistant coaches prompt the players to “do it properly” by “keep[ing] the ball on the deck”. In this case, to do *it* properly meant for the players to pass the ball along the ground which is like George’s passing and moving practice above. In another version of the gate game practice, where the eighteen-yard box is used as the boundary with a line of cones splitting the box in two, passages unfolded only once a ball is enrolled into either half of the eighteen-yard box. The line of cones down the middle of the box gives George an indication of which group is defending, and the ball confirmed whether they would remain defenders (or not).

Cones were also delegated with the authority to manipulate the movement of the players. The coaches arranged practices in a certain shape or size to discipline players to stay within a specified area. For example, George asks some players to make the coaching area smaller/bigger on two occasions of a possession practice and each player picked up and moved the cone out closer/further from where they are standing. During a wall player practice, Paul approached me saying he’s going to “change the practice to dictate play [with] less players in the middle to create opportunities for gaps and passes”. By placing some cones beside the seven-a-side goals alongside players, known as wall players, there is more space in the middle of the practice. As a result, there are fewer players in the middle of the practice. On another occasion of the wall player practice, two eleven-a-side goals are enrolled in an area just larger than the eighteen-yard box. As a passage was unfolding, Paul approached me and said:

See by having too many players initially that was the whole point of having that smaller area. It was tight, rushing after the ball, but now we’re getting success and discipline. You

know, so it's trying to get them to understand the size of the park and use it to their advantage. That's the whole point of it. But we're getting there. You see, initially you're trying to keep them moving but now the ball does all the hard work.

Manipulating the size of the Field of Play by having a "smaller area" is a deliberate strategy to "discipline" players. Rather than "rushing after the ball", the focus is on the "ball" doing the "hard work" for the players' "advantage". At other times, the lines on the pitch are used for convenience. For example, Paul's assistant coach added a condition in the form of an unwritten rule to the passages during an attacking and defending practice. Attacking players shooting towards the seven-a-side goal must "touch the ball inside the box before they can score a goal", while defenders have to receive a pass inside the orange box for the equivalence of a goal. Here Paul's assistant coach uses both the markings on the Field of Play and cones for manipulating passages. Some of the non-bibs then call for an offside (law eleven) after a green player scored in the goal, and this reinforces the idea that there is still a desire for Game-like rules even when the Field of Play has been displaced.

To summarise, placing down cones on the Field of Play marks a departure from The Game towards the new boundaries of a field of practice. Conditions and progressions are then added to practice arrangements.

Conditions and progressions

Actors can be further disciplined by coaches when they delegated authority through adding conditions to passages. Conditions are unwritten rules invented by coaches which become embedded within practice arrangements. In this sense, the condition becomes an 'obligatory passage point' (Callon 1986) for the players to pass through. For Callon (1986), an obligatory passage point is the first of four moments of translation known as 'problematization' that brought the fishermen, scientific colleagues, and scallops into an alliance in order to 'induce' the scallops to multiply. The idea of the obligatory passage point can be applied to the gate game which consisted of a line of white cones that split the eighteen-yard box in two halves, with bibs given to two thirds of the players and balls placed in the 'D'. There are three groups of players (not two), two groups (attackers) on either side of the box and another group standing along the white line of cones (defenders). The condition added by George is for one group of attacking players to

make five passes prior to passing the ball across to the other group of attackers. I became aware of how conditions become *obligatory* in practices when an attacking player, who tried to pass the ball on his second pass, was called out by some of the defenders. Not only did the ball give an indication to whether the defenders had won the ball (or not), but so too did the condition.

Conditions also transformed into progressions that are progressively more challenging than the preceding condition. This can happen when players pass through the condition too easily. For example, a group that received the ball in the gate-game from the other group of attackers quickly passed the ball five times before the defenders even entered their half! George added several more progressions, the first of which was for the players to perform a “one-two before the ball is played across”. As a player failed to perform a one-two but still passed the ball across, George said, “that’s not a one-two, oranges are in”. Similarly, George’s assistant coach threw up his hands hysterically as yellows passed the ball and then a player kicked it over indicating “that wasn’t a one-two” while looking at George. In other words, the players did not pass through the condition. Too many progressions added together can cause confusion as some of the players asked George whether the first condition of five passes is still in effect. After George confirmed, another progression is *added* where the attacking players are asked to perform an “aggressive pass” when in the transition of switching the ball from one half to the other. Then, some other players ask in further confusion if the one-two condition still applied alongside the aggressive pass condition, and George confirmed. The more progressions added to a practice, the more the coaches must translate to the players the differences between the old and new condition.

However, conditions can have an adverse effect on the agency of actors. For example, some of the wall players in a wall player practice, who are scattered across the perimeter of the area, become immobile when they are positioned on or between cones (condition: they must remain on the perimeter of the practice). George places eight cones in a rectangular shape located within a quarter of a third of the eleven-a-side pitch. There are three groups, two competing for the ball on the inside (greens versus blacks) and another group (greens) standing on the perimeter. For the teams competing for the ball on the inside there is an expectation of passing the ball to a wall player who returns the ball to the group in possession of the ball. George’s assistant coach explains, “the outside [players] are trying to act as options for the players on the inside who have

to find a pass to the outside players”. Here, the ball and players moving on the inside contrasted with the wall players who are “standing still”. The lack of mobility of the wall players is recognised by George:

You can't just stand on the line, wait for the ball to come to you. On the line, you need to go and follow the ball ... it's all about shape, see when you play eleven-a-side it's all about your shape. If you can't keep your shape, you've lost the space, lost your flair, and lost your chance to move the ball better.

The players on the outside are, in a metaphorical sense, like a *wall* from the way that they stand “on the line wait[ing] for the ball to come to them”. Players can also immobilise themselves when I noticed George's assistant coach telling a player to take their hands out of their pockets. For the wall player to become a player, they must “follow the ball” but not in a direct sense. Rather, George encourages the wall players to follow the ball by moving up and down “the line” in the hope that they will receive the ball. If they maintain their shape, they might be able to “move the ball better” which is relevant when playing an eleven-a-side Game.

Paul also set up a similar wall player practice but with variations in the mobility of wall players. The first condition for the players on the inside is to complete five successive passes before passing to a wall player who has only “one touch” if they receive the ball. That means the wall player will have to pass the ball back in towards the inside players in one pass if they receive the ball. A progression was *added* which restricted the players on the inside to “three touches on the ball”. Then, another progression is introduced for the wall players to take the ball “in” with their first touch because Paul noticed the wall players being “very static” or immobile in their movement. Here a role reversal took place between the inside player who must “follow their pass out to the wall player”. In other words, one becomes a player while the other a wall. This highlights a point of difference between Paul and George's wall player practice in relation to the increased agency of the wall players (Paul's practice) in not being limited to standing on or between cones (George's practice). Other differences are noticeable where Paul's practice area is double the size of George's and with fewer players because George often coached the team as a single group. On another occasion of Paul's wall player practice, two seven-a-side goals are mobilised with goalkeepers and a condition is put in place for the inside players to play through either wall players

(two for each team) before they can shoot towards the goal. In this instance, the wall players become another ‘obligatory point of passage’ (Callon 1986), as the inside players cannot score on goal unless the wall player is enrolled. Three progressions took place. First, only the wall player passed to becomes enrolled while the other remains a wall. Second, the wall players return to be a wall for the team who loses possession. In a third and final progression, there are no wall players, and the players compete in a four versus four.

To summarise, coaches delegated authority when they added conditions. Conditions became an ‘obligatory passage point’ for players to pass through progressively.

Objects of ‘recalcitrance’

In the transition from one practice to the next some of the actors become delegated with authority once again. Indeed, Paul and George often busied themselves organising the set up for the next practice while they told the players to go for a drink. For example, at the end of one practice, Paul instructs the players to “collect the cones and put the balls in the goals”. The lifting of cones signals one practice has come to an end, while the placing of the balls in the goals might be an indication of the setup for the next practice. Otherwise, Paul would have simply told the players to put the balls in the bag. On some occasions, however, there is a ‘recalcitrance’ from some of the objects. Here, recalcitrance is borrowed from Bennett (2010, emphasis original) as to how nonhuman things can show a *resistant force* to the authority of delegation.

An unwanted bib is a resistant force when it lay on the ground in a practice that involves passing the ball between players standing on the perimeter of a circle away from two players who clutch onto bibs in the middle. As a player on the perimeter loses possession of the ball, he then is immediately thrown a bib by a player in the middle who anticipates the role change between the players. However, the player on the perimeter refuses to go in the middle when he said he’s “not going in”. The material agency of the unwanted bib which lay on the ground becomes an object of recalcitrance. The bib highlights an absence of bodies in the middle of the practice. To overcome this, the coaches would sometimes delegate authority again by gesturing for players to take the bib.

Cones are also a resistant force in the way that they disrupt the flow of practices by their material agency. George says in an angered tone, “the flaming cone man!” as he blames a cone for misplacing his pass. On another occasion, when a player repeatedly kicks an upside-down cone, the same cone displaced the path of his pass in a later passage. Another similar encounter happened during a three-player rotation in a shooting practice by Paul. When the third player in the rotation passes the ball into the path of the shooting player, the ball is displaced by a tall red cone. As the ball contacted the cone, the shooting player’s “curved run” movement towards the ball is disrupted, leading to an overshoot first touch and the goalkeeper gathering the ball. The player then jumps over the goalkeeper and momentarily looks up in the sky, as if accepting defeat, before then turning back to walk to the next position in the sequence. Cones also spark moments of controversy for when they are used as goals. For example, in an attacking versus defending practice, where the defenders are required to touch the ball inside the rectangle of cones, a player says, “I was in the box”, but Paul’s assistant coach did not award a goal. Here, the disruption in convention of what is a *goal* in a material sense becomes significant for how a goal is scored.

Objects are not relegated to an inferior status but exercise material agency through their delegated authority in a similar way to players and coaches. For example, the verbal signal “end of practice” to players is sometimes not forceful enough. George’s assistant coach, who is often found lurking on the outside of the practices collecting the stray footballs, becomes even more present when he blew his whistle. Indeed, on the few occasions when the whistle is blown it transforms the actions of players. For example, during a controversial moment when nearing the end of a practice, where the ball had gone beyond the white lines on the eleven-a-side pitch, the goalkeeper, who gathered the ball, is met by a swarm of players who attempt to illicitly take it from his grasp. Moments later, Paul’s assistant coach blew his whistle and then, almost immediately, the players dispersed. On another occasion during a shooting practice, the blown whistle gives an indication that the players did not reach the condition of scoring a certain number of goals and George subsequently tells them to “get to the line” for sprints. The agentic force of the high-pitched sound of the whistle settled the potential controversy in the first instance but signals something undesirable in the second.

I noticed objects that are no longer delegated with authority at the end of sessions runs contrary to their material agency in practices. For example, as George asks the players to “collect cones and balls”, not only has the practice come to an end as cones are lifted but perhaps the session has too, as balls returned to the bag. In this case, the objects become recalcitrant to themselves as their material agency becomes ‘dormant’ (Harman 2018): balls which are passed become unpassed, cones marked cease to mark, and bibbed players become bibless.

Sometimes, objects are no longer delegated with authority when they become broken. This is intimated in a dialogue between Paul and some players:

Paul: Can you do me a favour, can you pick up the cones? Yes, I’ll take those two. I’ll take the red cones.

Charlie: Paul, a player hit the cone and broke.

Paul: That’s alright, go put it in the bin. Joe, that was my ... did you break it? ... that was my favourite cone. That was the very first cone I ever had as a coach. That’s got ... I don’t how you put a price on it. What would you say Joe, as a price?

Joe: A fiver?

[laughs from other players]

Paul: You can’t price that.

Jack: 10?

Paul: I don’t know ... That could be a year’s fine. Joe might have to sign before every game!

In the humorous exchange above, the object of recalcitrance is the cone. The elaborate discussion of the price of the cone epitomises the anthropomorphism between the broken cone and players, who can, too, become *broken* when injured.

While the fate of that cone is sealed, some objects, like the ball, obstinately refused for their material agency to be lost. For example, George's assistant told a player to leave the "flat ball" at the goal. But moments later the ball appears again, and another player says, "that's the flat ball!" Then, as I retrieve and pass a ball to George's assistant who said, "where's the flat one?" and then kicks the ball away. To George's bewilderment, he asks if his assistant was "alright?" His assistant responds, "it's the flat ball!" In this case, we can assume that the coaches are acting in accordance with the Laws of the Game, as footballs must be a certain size and weight. However, this is not always the case because in Gibson and Groom's (2018) study the coaches used flat balls for an exercise of punishment for players.

To summarise, recalcitrance is not something that belongs to human agency alone but can be expressed in more subtle ways from the materiality of objects. Indeed, in the cases identified above, it is the material objects themselves that alert coaches and other players to the break of authority in delegation.

A 'lieutenant' holds the place for something else

Cones and bibs are prominent in the practices above and become what Latour (1999a, 188) calls a 'lieutenant' in holding the place for something else. To elucidate the agency of nonhuman things, Latour (1992) suggests you must consider what human and nonhumans would have to do if that *thing* is absent. As markers, cones hold the place for the white lines on the eleven-a-side pitch. In this sense, there is an 'actorial' (Latour 1999c, 188) shift, as cones are a new actor that takes the place (in most cases) of white lines on the Field of Play. If cones are absented, George and Paul would have to continually paint and repaint the white lines on the eleven-a-side pitch for marking practice areas. And if they changed their mind on the size of the area, it would soon get very messy! (See **Figure 7: Mapping practices**)

Starting top left on the top diagram, the two parallel white lines are the equivalent of the six cones used for George's warmup practice. Below that, the rectangle with two zigzags replaces the six cones in the passing and moving practice. Intersecting with both practices is the wall-player practice in the form of a large white perimeter that runs through the passing and moving practice, meets the six-yard box line, by-line and side-line. The two circles are the possession practice in keeping the ball off the players in the middle who are holding bibs. Finally, the single white line splitting the eighteen-yard box is the gate game.

Starting just below the white line on the bottom diagram, the two white lines below the topmost white line which mark the third of the pitch are cones-as-goals for the defenders in Paul's attacking versus defending practice. Below the left white line, you will notice a rectangle and a smaller box inside marking the passing and moving practice of the broken cone. The two intersecting lines across the larger rectangle is the warmup practice. Notice the smaller seven-a-side goal placed in the middle third of the pitch and the two small white lines on either side are Paul's version of the wall player practice. In front of the two smaller white lines are larger ones for the crossing and finishing practice into the seven-a-side goal. The smaller rectangle on the right side that intersects with the eighteen-yard box are the cones-as-goals for the defenders to score the equivalent of a goal and is opposite to the seven-a-side goal for the attackers. Finally, the second eleven-a-side goal is positioned close to the eighteen-yard box and wall-players' starting positions are marked by the two parallel white lines on either side of the eighteen-yard box.

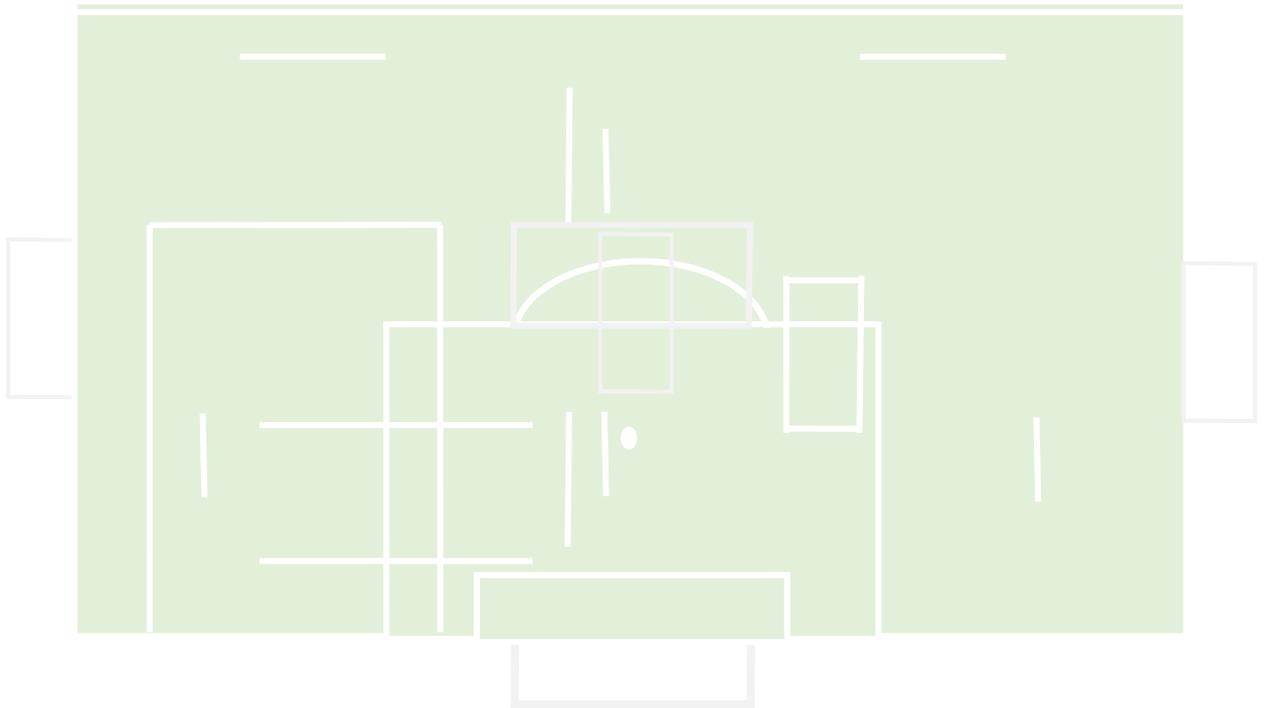
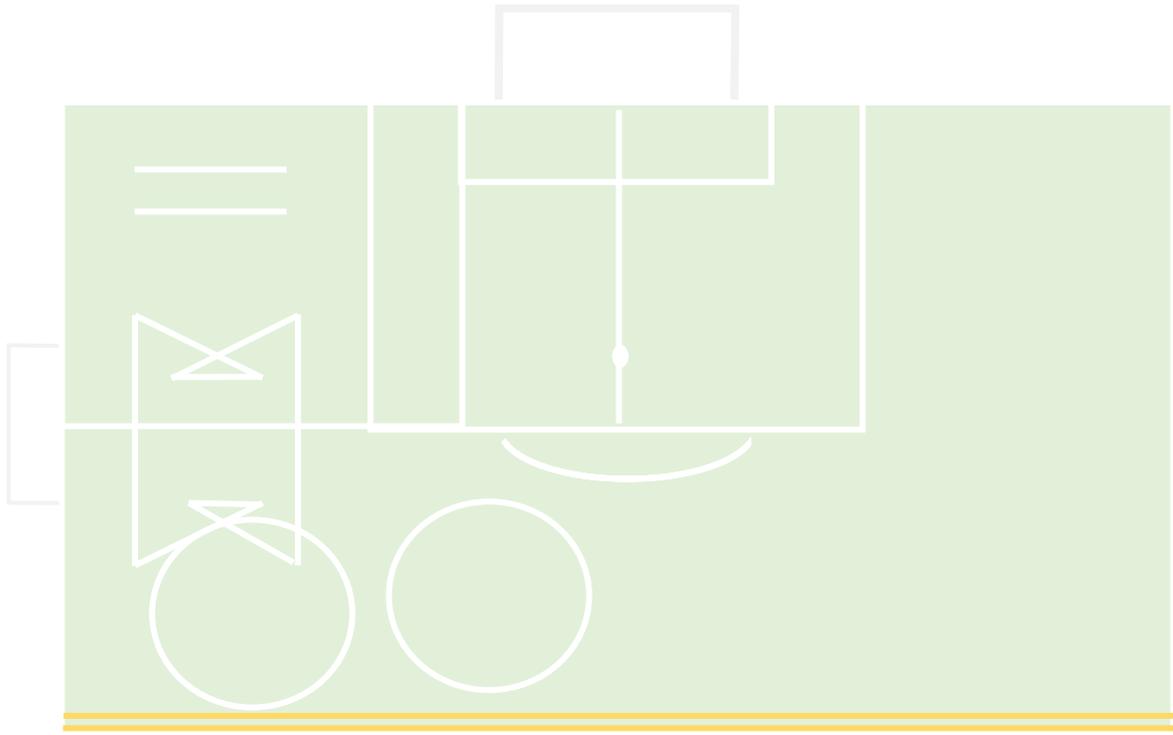


Figure 7. Mapping practices: A cartography of white lines in the place of cones for George (top) and Paul's (bottom) coaching practices

Bibs also become a lieutenant for identifying who's who in a practice. Without bibs, it becomes increasingly difficult to distinguish between attackers and defenders, as in the case of the crossing and finishing practice in Figure 8. Passages unfolded consecutively on the left and right flank followed by a cross towards attackers approaching the goal. After a flurry of crosses, Paul's assistant coach altered the practice by *adding* three defenders in front of the seven-a-side goal. The attacking players' passage to the seven-a-side goal is blocked by defenders who could, if they intercepted the ball, drive out towards two sets of tall red cones on either side of the attacking players' starting positions to score the equivalence of a goal. As the middle of the box becomes continually "congested", the more difficult it is to distinguish between the attacking and defending players. Paul's assistant coach stops the practice, and he walks over giving bibs to three defenders. The assistant coach's delegation of authority of bibs to the defending players makes visible that there are two groups of players: attackers and defenders. Otherwise, any one of the players on the ball could have been an attacker or defender! (See **Figure 8**. *Who's who?*)

The difficulty of not being able to identify players is also expressed by George, who said "it's going to be much harder now", after realising at the start of one session that they did not have any bibs. Bibs helped the coaches identify the player and their position in a practice. For example, after switching over the players in an attacking versus defending practice, George asks "who's missing?" when he notices a green defender is missing. Bibs also have a transformative effect on the coaches in practices. George, whose bib is sitting halfway down his body (it was a youth sized bib after all) started dancing in the goal after saving a shot. Then, moments later after the opposing team scored because George was absented from the goal, he then took off his bib. I documented this fieldnote in the form of a question: "is George now in the non-bib team?" But, to my surprise, he returned to what I referred to at the time as 'coach mode' because he continued to give instructions to players, such as "keep the ball", and commented on passages as they occurred. This is confirmed when he added a condition of "three touches" before stopping the practice altogether because he asked the players to get back into their own half and into shape or position. Before long, George is back in the goal but this time for the non-bibs. Then, as he saved a goal, he screamed, "Whoa"! If anything, this acts as an important reminder to coaches that the agency of bibs can convince them that they too are players when really, they are not!



Figure 8. *Who's who? The moment a ball was crossed in towards (attacking and defending) players*

The coaches can identify players not only by their names but also from the numbers used in the eleven-a-side Game. For instance, prior to the corner during a nine versus nine Game, Paul organises some defenders for the attacking team and asks, “how many defenders?” And then, focusing his attention on the players near the front post position in the box Paul asks, “who’s playing six?” He then prompts for the defending team to mark “man for man” so that all bodies are marked. In another shooting practice, George’s assistant coach also calls upon a player’s number (“who’s number nine?”) when he notices a player is absented at the cone on three occasions. Similarly, a player in a crossing and finishing practice, who is missing in the second passage, comes to the attention of George because only two players ran into the box. George first asks, “who was missing?” On a second occasion, the same player initially forgot to run but is reminded by some players. Then, on a third occasion, George asks, “John, where are you? That’s three times you have been missing!” Bodies can be absented from their position in a practice, but the coaches can call upon lieutenants to ensure the authority of delegation remains in place.

Conclusion: from network set-ups to trials of strength

As actors become delegated with authority by coaches the network setups can be mapped. Some actors are more mobile than others when conditions and progressions become embedded within practices, while others are lieutenants for holding the place of others.

Move three (trials of strength): quasi-object

Now that I have introduced both actors and the network set-ups, I dive into the passages of some practices in which actors become defined by a trial of strength.

To be seduced ...

Drawing inspiration from Serres (2007: 264), *to be seduced* is used in the same sense of Ulysses who is 'led outside the normal orbit, the straight, normal or ordered path' by Circe and others. Here I refer to the Latin etymological roots of the term *seducere*, composed of the verb *ducere*, 'to lead', and preposition *se*, 'aside, away' (Gherardi and Perrotta 2014).

The middle of the pitch is often a traffic jam of players jostling for one ball. Paul highlights "the middle" of the practice as a "problem" in the wall player practice and instead asks for the players to "find space". On another occasion, Paul uses the phrase "still bunched up" as an analogy of the players all going for the ball, and he then points to where the space is in comparison with some of the players' positions. Then, shortly after, Paul's assistant spoke one-to-one with a player and gestures by moving his hands out from his chest away from his body, possibly as an indication for the player to get wider. But where is the "middle" in this practice? It is not the centre circle as you might assume in The Game. The middle in this wall player practice is somewhere around the right corner edge of the eighteen-yard box. In another crossing and finishing practice by Paul's assistant coach, the middle is near to the edge of the seven-a-side box where the three attacking players are trying to score a goal past three defenders and a goalkeeper. Paul's assistant coach reminds the players "not to rush into the middle as it becomes congested" and instead instructs the players to "stretch the game". In an attacking versus defending practice, Paul points out that the players have a "narrow vision" as all they are "thinking about is going there" towards the eleven-a-side goal, and he then tells the players that they need to get "wide and not go direct all the time". The players have a tendency of "naturally coming in" and instead he encourages players to "naturally get wide". George's assistant coach encounters a similar problem when he said players are "getting into trouble all the time as they are surrounded by players" during a possession practice with wall players. In response to players "bunching" towards the ball, Paul asks the wall players to pick up their red cones (starting position) and move them further afield. But as the next passage starts, Paul notices that some of the players "ran in again", and later said, "every time we

come in here [the middle] we cannot play football". The wide players on either team are told to stay in the seven-a-side goal box areas, which Paul refers to as "end zones" to help them "see it, you've got to visualise where we're going". In another attacking versus defending practice, Paul asks, "who passes the ball? Player closest to the ball. So, what do the rest of you do? Get back in position". Here we catch a glimpse of a tension between the ball and the players' positions. The importance of players staying in position is reinforced by Paul during a stoppage on another occasion of the attacking versus defending practice:

Freeze. Right, what you would expect for getting back into it. Where's the danger? Hold the ball there, Anthony. Hold the ball. Ok. Back in there, Jim drop it in. Who's playing right midfield? So, why are you there? You go and be disciplined and take them away.

The passage comes to a halt but not completely. Paul did have to ask twice for a player to "hold the ball". Left in suspense and confused, we still don't know where the danger *is*. Paul asks two questions in succession: first about a player's position and why the player is narrow. Paul then asks for the "right midfield" player to "be *disciplined* and take them away" and, shortly after, the player moved out wide. Here discipline is associated with the player's position as a right midfielder to prevent a further narrowing of his movement. Discipline fits in well with Foucault's ([1991] 2020) notion 'docile bodies' where players remain disciplined to their position on the pitch. But as the ball bobs and weaves between players, the docility of players becomes weak because players don't remain in their position as they constantly move taking up multiple positions. Paul elaborates on his use of the word "danger" on another occasion in the attacking and defending practice:

Where's the danger? The danger's here because I've got the ball. Yeah? I'm expecting you to press. Yeah, so you come and press me. You've put me under pressure, but I've got options, I've got to go there. If I drop back in, we shuffle across ... So, let's go and reset again. We don't all have to chase the ball we work in depth.

The ball located at the feet of Paul signified "danger" as it attracted opposing players. "Man on!" shrieks George's assistant coach and some players. "Let them beware" cries Serres (2007) when

speaking of the player who is transformed when in connection with the ball (quasi-object). According to Serres (2007, 224-234) the quasi-object is:

not an object, but it is one nevertheless, since it is not a subject, since it is in the world; it is also a quasi-subject, since it marks or designates a subject who, without it, would not be a subject. The one carrying the ball is marked as the victim until the sky falls on its head [and the] speeds, forces, angles, shocks, and strategic thoughts is woven here and now ... [but] suddenly, it is no longer true; what was supposed to be decided isn't; the knot comes undone ... history and attention bifurcate ... The game is this vicariance ... The ball is the quasi-object and quasi-subject by which I am a subject, that is to say, sub-mitted ... Fallen, put beneath, trampled, tackled, thrown about, subjugated, exposed, then substituted, suddenly, by that vicariance.

“That’s why they are hunting for it” says Paul in response to an earlier question. Paul stops the practice and simulates possible future actions in anticipation of bodies approaching him. Then, as Paul signals the next passage, the defenders are reminded that they “don’t all have to chase the ball”. The ball becomes an actor of interest, particularly for the team not in possession, as in the case above, where some of the defenders are seduced or led astray from their positions.

The ball at Paul’s feet, however, is not the *only* danger. On another occasion during an attacking versus defending practice, Paul asks, “where is the danger?” followed by an arm waving gesture from a green player in the direction of the ball. Paul confirms that “the ball’s the danger”. Paul then repositions the green player closest to the ball and says, “if you go and commit, you must win that ball”. The green player must “jockey and push him on the outside”. Danger is associated with risk as if the green player commits but fails to win the ball, then the player will be through on goal. Keeping the quasi-object on the outside is important as moments later Paul says, “away from the danger”, while turning his head and pointing towards the seven-a-side goal. The goal becomes another *danger* or actor at risk. Then, after some further repositioning on the opposite flank, Paul asks, while pointing towards the direction of the ball, “is the danger over there?”, and continues, “not always, you’re a danger as well, you’re a danger” while pointing to another two non-bib players on the team in possession of the ball on the opposite flank. Danger is not singular

but multiple when agency is seen as ‘distributed’ (Bennett 2010) across the field of practice. If the players are to stay in their positions, then the quasi-object might be kept at a distance by the green player, the goal will be guarded, and the other players on the opposite flank will be closely marked. Danger helps to elucidate that there is the potential for risk across the field of practice, and *to be seduced* by the quasi-subject is to do so at your own peril.

The goal becomes another object of interest when players are inclined to try and score rather than to play the ball wide. Both eleven-a-side goals are immovable objects, bolted into the wall or ground at each club. I noticed sometimes the players or George kick the ball towards the eleven-a-side goal before the start of, during the middle and at the end of a practice. For example, in the transitory periods from one practice to the next some of the players kicked the ball towards the eleven-a-side goal. George, who initially tells the players to “keep out of the eleven-a-side goal”, suddenly kicks the ball towards the goal during an attacking versus defending practice. On another occasion, George kicks the ball twice towards the eleven-a-side goal while the practice was ongoing and a player turns asking, “how can you miss twice?” Or a player during the gate game, who in retrieving the ball to George’s assistant coach kicks it back with force because the balls are enrolled from the mouth of the eleven-a-side goal. At one point, George’s assistant coach turns his back on a ball kicked towards the goal and retorts, “stop it!” At the very least, we can be reassured in saying that we are no longer playing The Game as on all these occasions the ball in the net did not count as a ‘goal’. It was simply a ball in a net.

The different interests between the players and Paul become noticeable as the goal might also seduce players away from their positions. For example, in a scaled down version of the attacking versus defending practice, Paul points to the goal and says,

All we’re thinking about is that there [seven-a-side goal] ... don’t always think about I’ve got the ball here I must score. We’ve got team-mates to go and support [pointing left and right]. You can’t always turn towards the goal especially when against defenders ... All we’re thinking about is going there [with both hands pointing forward, palms facing at head height towards the seven-a-side goal], it’s a narrow, narrow defence. Let’s go and stretch the game ... Guys, I’m trying to get you to open your eyes. It can’t just be going direct all the time, build the play. If there’s nothing on, we go wide. If there’s nothing

on, play it back in here, play it back out again. Nothing on. Go and switch the play, keep possession, find the gaps.

Paul refers to the senses by “open[ing] the eyes” of the attackers to progressively develop width in attack to mitigate against players becoming too narrow by only focusing on the seven-a-side goal. There is an emphasis by Paul for the players to “build the play” rather than “going direct all the time”. In a similar encounter during the attacking versus defending practice, Paul encourages the players to stretch *the game* rather than going to the goal straight away:

What we want to do is we want to drive them in. So yeah, I’ve got the ball. If I play it to Archie, blues come and press it, you come and press it Jack. Ok. I’ve got Stuart over there. Stuart’s obviously back in but if there is nothing on, let’s see it. Ok. You go and stretch the game, Stuart. I’ve got options there. I could go and link play, I could go and find Anthony. Let it go through, let it go through. Anthony, bounce it back into me. Yeah, and then Harris breaks the line and we’re away. Yeah alright. You don’t have to go to the goal straight away, build it up.

Paul highlights a tension between “build[ing] it up” rather than “go[ing] to the goal straight away” illustrating how the players and their positions must work together to form a coordinated actor network. In another case, a defender becomes seduced by one of the yellow gates which leads to a stoppage in the practice by Paul:

And freeze there. So, Lewis, you’ve ran into about eight players. Yeah? Remember what I said a minute ago? You’ve got loads of team-mates on the park. You can’t do everybody’s job. Ok. So, you’ve went there thinking that’s a good decision. Here’s a good decision. Ball comes in, play. You can go back to Simon, Simon can go and spread the game out to Ashley. Yeah. The ball does the work. You’re breathing really heavily aren’t you, cause you’re running everywhere!

Lewis is led astray by the yellow gates in trying to score a goal and ended up running “into about eight players”. Paul suggests that he let “the ball do the work” rather than going alone. In the parlance of ANT, the whole is more important than its parts and the relations are made stronger by their connections. Bryant (2011b) fittingly captures the work of the ball as it ‘flies up and

down the field' in an 'aleatory' fashion but, at the same time, 'brings the players together in constantly shifting configurations or relations'. The aleatory or random passage of the ball is also recognised by one of George's assistant coaches who tells the players not to kick the ball "aimlessly up the park". However, players can also move in an aleatory fashion as George says in response to some players running into the box during the crossing and finishing practice, "you all are donkeys". The coaches encourage the players to consider their actions in relation with/to the ball rather than kicking the ball or running aimlessly.

To summarise, players who become seduced by the quasi-object do so to be the subject of the ball (quasi-subject). For coaches, this means that they must be able to manage the tension between the middle of practices, the ball, the goal and the players' positions so that they become less aleatory and a more stable actor-network.

... or not to be seduced

Sometimes staying in position is not enough as the ball might not come to the waiting player. There are several instances where players would call and sometimes even scream for the ball, but the quasi-object might simply take a different passage. For example, a player repeatedly called for the ball, but it is crossed instead, or another player, who screamed for the ball with their hands above their head but did not receive it, or yet another player who was left frustrated when they did not receive a pass as the quasi-object shot the ball towards the goal instead (and missed). The player vents in response to the missed shot, "what are you doing? Pass the ball!" These instances reinforce the material agency of the ball and the players' desire to be the quasi-subject. Perhaps a more subtle gesture is needed as demonstrated by Paul when he moves out his hand rather than calling for the ball. But players who remain in position might still fail to contact the ball. For example, as some players whirl towards the box during a crossing and finishing practice, the ball whizzes from one crosser to the other, and George rejoinders:

Guys, we need to attack the ball, c'mon! ... I need more commitment on the ball in the final third. It is too easy. You are by after every final ball. Go and challenge it. If the ball is just in front of you, slide in and go and commit to it. If it's in the air do not back off. Ho! Do not pull away from the header.

A whistle from George echoes after none of the three players contact the ball crossed in. George urges the players in a desperate plea for “commitment on the ball in the final third ... [to] ... slide in and go and commit to it ... [and] ... not [to] pull away from the header”. Here commitment is contacting the ball using any part of the body: “dive with their heads or knees to get on the end of it”. After a flurry of crosses and more missed opportunities, the assistant coach James moves into the field of practice in a fury and flounced this out:

Stop it there. Stop, stop, stop, stop, stop. Are you scared to attack the ball? No? Do it! Too many chances that are missing the front post and the guy at the back post is just standing like, ‘Oh, there’s the ball’. It’s an astro, slide for it cause if we get contact it might go in.

Unlike Paul’s practice above where the players have the ball in proximity, here the players are running towards the goal to meet an aerial ball which is travelling at force from a distance. Like Latour’s (1992, 232) unskilled nonhuman groom of a door with powerful springs that ‘slam shut so violently’, the ball could leave the passer-by with a ‘shorter and bloody’ nose (Latour 1992, 232). In other words, the players are alert to the force of the ball and that is perhaps why they do not contact it.

But coaches, too, are alert to the force of the ball. For example, when a ball is fired back into the middle during the gate game, George asks, “Who was that?”. George then tells the players to, “let the others know the ball is being played”. In some practices, however, the coaches encourage the players to use force. For example, George prompts the players to “smash it” (the ball) towards the eleven-a-side goal during a shooting practice. But sometimes balls hit with force do not always nestle against the back of the net. When an attacking player shot towards the seven-a-side goal during a wall player practice the ball hit the back of the defender and Paul asks, “did that sting?” As George kicks a ball in the air, a player who headed the ball still has their hands on their head for some time after the moment of contact. When a player shot towards the seven-a-side-goal in a shooting practice, Paul’s assistant coach turns his back in response to the force of the ball. Even some of the parent’s ducked in anticipation as a ball flew over the bar in Paul’s shooting practice. The coaches curated metaphors for describing the force of the ball. For example, as a player shot thunderously during another occasion of the wall player practice Paul says, “there’s the hammer!”

However, George laments a player in the crossing and finishing practice telling them, “Not to play football if he can’t put his head on the ball”. Although the attacking players’ bodies are not seduced from their positions, the players still failed to contact the ball.

Conclusion: from trials of strength to translations

In the trials of strength inspected above, some players are seduced (or not) from their positions by the quasi-object. Consequently, the coaches are called into action.

Move four (translate the trails): interruptions

Every trial leaves a trail. Practices that withstand trials of strength continue uninterrupted or at least up until the point they come to an end. However, interruptions in a passage might signal a discontinuity or weakness in the actor-network. In what follows, I consider how the coaches *translate the trails* by helping players move from a weak to a stronger position.

Freeze, freeze, freeze

“Don’t move” Paul’s assistant coach says repeatedly to the players. A “freeze” signals for the passage to come to a halt. According to Paul freezing practices is a necessary part of coaching. When speaking to a new coach at one of evening session, he tells them to look for a “freeze moment” in a passage. When the coaches freeze or whistle for a passage to stop, they did so in order to recreate a passage, propose an alternative or start the passage anew.

Recreating passages gives coaches an opportunity to review a passage up to the point of an interruption. For example, as the attacking players are moving towards the seven-a-side goal during a crossing and finishing practice, Paul says, “freeze”, and then recreates the passage. Paul repositions the incoming attackers to their starting positions and then prompts, “you drive to the front post [player starting at back post area] and Dylan you drop back in here [towards back post area]”. The point of the freeze is to walk through the desired movement of the attackers. In another “freeze”, Paul asks whether a player is “happy with their position?” To the player’s “yes” response, Paul quizzes, “are you?” Then Paul says, “no”, and highlights a “massive gap” between the players who are “too flat”. Without an interruption, the player’s position might continue to flatten while moving too far apart from the other players.

Coaches often give what they call “coaching points” when recreating passages. For example, Paul gives a coaching point to a green player who loses possession of the ball to a non-bib player during a wall player practice:

And freeze there. A wee coaching point, definitely for Saturdays, yeah. When that ball comes across go and pass it back in Charlie, over there. The ball comes from the goalkeeper, right back. My body position ... there, face that way. We’re not looking at

the game, the game's in-front of us ... we're going to do it again Charlie. Play it out, when you get it, take a touch out and then go and play.

Paul steps into the confines of the practice and gives a “coaching point” because the player takes his first touch of the ball inside the middle area of the practice and subsequently loses possession of the ball. Initially, Paul recreates the passage and then corrects Charlie's body position so that he is “looking at the *game*”. But notice the use of the word ‘game’ here when making the coaching point. What it is that ‘game’ means here remains unclear. Paul then signals for Charlie to do the passage again. Although Charlie's first touch took the ball in the middle of the practice again, which is like the original passage, the subsequent pass retains possession of the ball. The discontinuity in the passage, in this case loss of possession, acts as a precursor to the interruption which is subsequently recreated.

Coaches can also sometimes become enrolled when recreating passages. For example, when a player loses possession of the ball from a misplaced pass during the wall player practice, Paul interrupts by saying, “freeze, freeze, freeze”, and he replaces the original ball player who becomes temporarily excluded. Paul then recreates the passage as he indicates “we're in position”. But as the ball is passed from the wide player Paul says, “we're in the wrong position”. Then, as the ball comes in for a second time, Paul demonstrates, by “tak[ing] it on your back foot, open it up, I'll go and pass it there to Zara [wide player]”. Although not directly expressed, we can conclude from the information provided between the recreated and the alternative passage that the loss of possession is precipitated by the player taking the ball on his front foot with a closed body position. Without the interruption, the intercepted pass might have been identified as the *only* reason for the loss of possession.

Alternative passages enable coaches to rework the original passage from the point of discontinuity with a desire to maintain continuity. For example, during the gate game George whistles, signalling an interruption, followed by “hold it there”, and comments, “[the player] should have made that run” as the ball is in motion. Notice here that the interruption is not precipitated by a loss of possession but rather it is the player's movement off the ball. First, George recreates the passage as he ushers an orange player to “play it back in here”. The passage starts again but the

player on the ball becomes momentarily excluded as George takes their position. As George receives the ball, he acknowledges the original passage but then seeks an alternative by gesturing with his arm out pointing in the direction of the other flank where an unmarked orange player is positioned and says, “play it through in there and then he’s got it through”. Contrasting the original pass where the ball goes backwards, the alternative crossfield pass perhaps makes the passage of the ball to the other side easier in the way that the player on the other flank is closer to the line of cones.

In another attacking versus defending practice, a “freeze” follows a loss of possession of the ball shortly after a wall player becomes mobilised. Paul recreates the original passage and then suggests an alternative when he turns his attention to the players off the ball and prompts Madison to “sit in” rather than “go in”. In this alternative passage, Madison, who shuffles closer to Paul, could either “go and have a shot or play a wee give and go”. In a later “freeze” during the same practice, Paul repositions some of the green players because they are “almost in a line every single time”. Then, as the ball becomes mobile again, Paul encourages the players to “open it up” and he presents an alternative passage for Dillan who “could have a touch and have a strike or bounce Callum”. In the recreated passage when Dillan receives the ball, he took several touches and a turn before bouncing the ball to Callum. Then, as the next passage starts, the alternative passage by Paul results in the ball flying over the crossbar from Dillan’s boot. In other words, Dillan did not pass the ball to Callum from what had been choreographed in the alternative passage moments earlier. Perhaps this is because the non-bibs (blues), too, are mobile and aware of the alternative pass to Callum. Dillan decides to shoot on his first touch, whereas in the alternative passage he took several touches before then bouncing the ball to Callum. This shows that recreated passages do not necessarily translate into alternative passages.

Another freeze is signalled by Paul in the crossing and finishing practice just as the crosser receives the ball while the two attacking players are about to run towards the box. The player starting at the back post already in transit, leaning on their front foot, stops abruptly, before then falling back onto both feet, and the player starting at the front post and nearest Paul glances across to the second attacker almost as if ready to pounce when the ball is in motion. Then, Paul ushers the back-post player to move towards the front-post area and the front-post player towards the back-

post area. A second interruption occurs when the ball is in motion again resulting in the crosser jolting towards the ball. Paul asks the crosser to “drive in” closer towards the goal. A few more steps forward for the crosser means a few steps back (recreated passage) for the front post player who didn’t “time their run”. At the same time, I notice the back-post player’s body starts to move closer towards the back post when the front post player moves away from the goal. But then as the front-post player makes the same move forward towards the front-post (recreated passage), the back-post player then takes a couple of steps back into the space behind the front-post player. This demonstrates to a certain extent that players’ bodies are becoming attuned to the relationality in the field of practice.

New passages are also proposed by the coaches but, unlike recreated and alternative passages, they do not necessarily take place after a discontinuity occurs. For example, after a passage culminates in a goal during the wall player practice, Paul applauds, which gives the impression of his delight, but he then says, “right, ok, a quick coaching point, guys”. The coaching point did not proceed like those in recreated or alternative passages as Paul proposes a new passage that does not follow from the original passage. Instead, Paul first indicates “what we can’t have” for when both wide players “step[ped] in” as there is “no outlet width”. Alternatively, Paul stages a new passage by positioning players (“if this player comes in here”) and then after taking possession of the ball, he says that the player can “take up and open it up” or “quite quickly go there” and “do an overlap” before “getting the ball in the box”.

The coaches also use the expression “game’s dead” to signal the end of a passage and for the players to start anew with no coaching point given. Subsequently, the players return to their starting positions and a new ball is mobilised. The coaches are often armed with balls ready to mobilise in anticipation for when a ball goes out of the practice area. Depending on the practice, players might collect the balls and return to their starting positions when a continual supply of balls is needed, as in drill-like practices. At other times, the coaches might call for the ball from players under a different coach if they veer too far from their third of the Field of Play. For example, as a ball went out of the area and onto the middle team’s third on the eleven-a-side pitch, George’s assistant coach calls for a player to return their ball. Coaches and players on the middle pitch, too, called for their balls to be returned on a few occasions.

An incessant feature of the gate game is the tireless gathering of stray balls by George's assistant coaches. I noted that this is to a certain extent the role of one assistant coach. I found it unsurprising when George asks the players to pass the balls back to him at the end of a passage because George most often enrolled the balls in the 'D', the semicircle at top of the eighteen-yard-box. A ball to be enrolled in the next passage necessitates that there are balls readily available in the 'D'. There are even times when I must anticipate interruptions because I was positioned directly behind the 'D'!

At other times, the coaches rotate the players in the practice. For example, Paul's assistant coach prompts the players to switch over the teams as the greens score against the non-bibs. A wall player practice is frozen several times by Paul who asks for a rotation of the players on the outside. Paul's assistant coach asks for the attackers and defenders in the crossing and finishing practice to rotate after a succession of passages. On another occasion of the wall player practice, Paul asks the players "who's not been a wall team yet?" And after some players said, "reds", the greens become one of the two teams on the inside who compete for the ball. George also employs a numbering system to indicate the rotation (one, two, three) in a shooting practice of each player's starting position marked by cones.

Conclusion: from translation to articulated propositions

The coaches are usually called into action when there is an interruption in a passage. The relational work of translating the trails involves recreating a passage, suggesting an alternative or a starting the passage anew. But how do we know that the coaches do this well?

Move five (articulated propositions): manufacturing

In the fifth move, I propose to articulate the *processes* and *practices* of coaching.

Manufacturing

How do we know that coaches speak well when coaching? To reach such a point, I will summarise the previous four moves in this fifth move. Starting from two different occasions in the attacking versus defending practice, Paul says:

I know it's manufactured, and we don't play in this way, we would be bigger. If we didn't have the 2012s (seven-year-old age group) tonight, we would be doing it at the halfway line, half the structure. Yeah, just get an idea of it, it's a big park

We're not playing normal eleven's guys because we've got a shorter park. I'm trying to get you guys to get wider, then we find the passes and the gaps to go and play

As expressed by Paul, the field of practice becomes “manufactured” which etymologically infers something being made and at the same time fabricated (Online etymology 2020). This is helpful because it recognises coaching as a duality consisting of constructed *processes* that involves assembling, disassembling, and reassembling the Field of Play, and fabricated *practices* which are inventions instigated by the coach in interrupted passages. The field of practice is at once both constructed and fabricated.

Manufacturing, as both construction and fabrication, recognises that coaching has no laws. The attacking versus defending practice in the quote above is assembled with cones, cones as goals, and more players and bibs, which are all located within a third of an eleven-a-side pitch. This also concerns the first and second part of the cartography as we move from The Game towards a field of practice and coaches delegate authority to human and nonhuman actors. Consequently, the Field of Play becomes even more *artificial* (not just the AstroTurf) because they are “not playing normal eleven's”, players “don't play in this way” and The Game “would be bigger”. The practice also involves fabrication in the way that the two quotes are taken from an interruption in the practice.

Yet, the coaches tend to superimpose The Game within the territory of their own practices. This is expressed by Paul when he said that they would be “doing it from the halfway line” if one of the other groups are not practicing because that is “half the structure” or half of The Game. George’s assistant coach also says that the point of training is “to put it into your mind for games” which gives the impression that coaching is a mere instrument of The Game. For example, after an interruption in the gate game, George’s assistant coach says, in reflection of the turnaround in The Game at the weekend, “just play the gate game not this ping pong stuff”. The territory of The Game, which relates to the Field of Play, is confused here with the gate game that takes place in the eighteen-yard-box with white cones running down the middle of it. The territory of coaching needs to be redefined as its own field of practice so that they are not superimposed within the confines of The Game.

Construction

Coaching is constructed through a process of assembling, disassembling, and reassembling the Field of Play. Construction recognises that coaches delegate authority to actors who are enrolled on the Field of Play and come together to form practice arrangements. But to say coaching is constructed is not enough. Although processes of construction give a glimpse of nonhumans, authority is still largely associated with coaches. Cones, balls, bibs, and goals do not *object* but rather simply take their position on the Field of Play. At the very least, construction recognises the agency of nonhumans which has been a limitation of coaching process and practice research as set out in the literature review (Chapter two) because these conceptualisations do not consider both human and nonhumans in their conceptualisations of coaching.

Processes and practices of coaching should not be viewed as separate from one another but rather seen as two sides of the same coin. While this recognises that they have different purposes, it still sees them both as essential to coaching. When taking a closer look at construction, I noticed that drill-like constructions presuppose the agency of some actors. For example, players move in a sequence from cone to cone and the construction remains relatively stable so long as players move in accordance with the sequence. If this is the case, the coach almost becomes redundant as there is very little interference required unless there is a breakdown in the sequence. But when players

are paired with an immobile actor, such as a cone, this can result in the players' movements becoming less mobile. In these instances, too much structure results in constrained agency. But at the same time, too much agency results in a lack of shape when players move out of position, as in more fluid practices when they are seduced or led astray by the material agency of the ball. In this way, processes and practices are seen as being inextricable features of coaching.

Constructions only take us so far, as what becomes assembled is later disassembled resulting in further reassembling, where actors are delegated with authority once again until the end of the practice. Although quite often when both club's practices came to an end other coaches readied themselves on the Field of Play with bags of balls and stacks of cones. In these processes of assembling, disassembling, and reassembling the Field of Play anyone can call themselves a "coach", but it is precisely how such constructions become fabricated (parts four and five) that differentiates between someone who, does, or does not, *move* through all the parts of the cartography of coaching.

Fabrication

In practices where there is less construction a greater emphasis of invention is required by the players. Perhaps players took so many detour,s as highlighted in part three, when they became seduced or led astray from their positions. The coaches observed 'at a distance' (Law 1987) while players navigated their own passage to their *goal*. In other words, although coaches give players a goal for what they are doing in the practice, they cannot move the ball to that *goal* for the players. The ball travels with the players and not the coach. Therefore practices are considered trials of strength: will players be seduced or not? Practices only remain stable so long as they continue uninterrupted or at least up to the point they come to an end. But such a utopian vision of participating in sport is unsatisfactory because interruptions is one of the distinguishing parts of the cartography of coaching. Indeed, discontinuities signal a weakness in the actor-network resulting in coaches being called into action. But it would be wrong to say that the coaches do all of the translation work by themselves when interruptions occur. When a passage is recreated, an alternative is suggested or a passage is started anew, it is the players who authorise the coach to speak on their behalf, otherwise they could continue to participate in sport like in *The Game*. The coaches translate the trails by speaking on behalf of the movement of the ball, the

arrangement of cones, position of players wearing different coloured bibs in relation to the goals and so on. They fabricate in order to help players move from a weak to a stronger position. Fabrication permits the coach to intervene and invent passages that would not have otherwise occurred if it was during The Game. Crucially, by recreating a passage, giving an alternative, or starting the passage anew, players are encouraged to think *differently* about their original passage.

The coaching point is the point of coaching

Coaches are called into action most often when a player becomes seduced or led astray from their position as this is at odds with what the coaches envision. If they didn't, there would be no opportunities for what the coaches called "coaching moments". Coaching moments occurred when there was an interruption in the construction of a passage. Coaches gave "coaching points" during a coaching moment where the point of difference between a discontinuity and continuity is translated through the movement of actors. Coaching points become the point of coaching which cannot be given *a priori* or made in advance because practices are relational, fluid and sociomaterial. It is precisely how coaches *articulate* coaching points that is so central to what Latour calls a *proposition* (see Chapter three). Given that coaching practices are manufactured, what the coaches *propose* cannot be considered as true or false, as there is no such criterion for one to verify such statements because there are no such laws of coaching as practices are invented by the coaches themselves. Consequently, it is precisely how the coaches *articulate* the many differences between the construction of what the actors *do*, and the fabrication of what they *could do* that lies at the essence of describing the enigma of "what *is* coaching".

The articulation of difference between construction and fabrication can be illustrated from an example of how The Game differs from coaching. When reflecting on a weekend game, George asks the players what they are "doing constantly?" Some players respond, "running for the ball" and George agreed. But then George encourages the players to be the "creative team who can keep the ball". George brings the idea of the gate game into a game-like situation:

When we play passing with the guys on the edge, we know we can keep the ball, but for some reason when we're playing against another team ... you need to let the ball do the work. Pass the ball. If your left mid, instead of trying to beat that man, I could bounce it

back to John. John could go and open it up to Charlie. Charlie could then turn out and open it up to Matt. Matt could then maybe bounce it back to the centre mid or to the right back and then he could go and spin off and put a ball in the channel ... you can't take three, four, five touches. One, two touches and get the ball moving quicker.

This short quote gives insight into how coaches can try to *articulate* aspects of The Game through their coaching practices. The conjunction *if* in the third line suggests George is fabricating but the work of translation is not carried out fully as the ball itself did not do the work. George spoke by himself and does not let things speak through their own material agency. Although George conflates coaching with The Game, this point recognises that there is an imaginative element to coaching (fabrication) that is not necessarily granted to coaches in The Game. But coaches do have to be very careful when they make such links as coaching is always more-than-a-game precisely because it is manufactured. When coaches do translate the trails of such passages, they must also translate the many differences between their practices with The Game.

Well-constructed practices can still collapse

Even though drill-like constructions have often been dismissed in some coaching pedagogy research over more game-like constructions (Ford et al. 2010), I will show, through the five moving parts of the cartography, how they are still important sites of learning.

An assembled drill-like construction seems to give the idea of stability. For example, as eight cones are placed down, players took their positions, and two balls are rolled into the arrangement. But then, as the practice is carried out, Paul suddenly says, “nah, nah, nah, nah, nah, nah”. Paul’s disapproval leads to a “reset” (i.e., games dead) and the players are told to get “back on [their] markers”. Paul then asks a player, “what’s happened?” Then, after repositioning some of the players (“go and walk over there” and “on you go over there”) Paul kicks a ball in exasperation towards a group’s corner. Paul says, “guys, we can’t progress it”. In other words, there is an impasse where no further progress can be made in the practice. Paul confirms this when he says to the players, “can’t go onto the next part of the session if they don’t nail it”. Paul then reinforces the sequence through verbal demonstration: “it’s got to be one two, show, in there, one two, back in”. He then gives an indication of a way out of the impasse: “nail it and we

move on”. Otherwise, the players will “keep doing it cause it’s important we learn, we practice”. The expression “nail it” is illustrative of a drill-like construction because the sequence involved passing and moving from cone to cone.

The impasse in the passage suggests that the players failed to move through the *trial of strength* as there is a weakness in the circulation of the *actor-network*. The only way out of the impasse is for the players to move in a sequence which *translates* to “nail it”: one two, show, in there, one two, back in. While the practice is well-constructed by Paul, as it remained stable, the movement of the players and the ball resulted in its collapse. Paul does not fabricate an alternative passage because drill-like constructions are expected to be enough information for the players to complete the sequence. But irrespective of how well constructed a practice is, it can still collapse if the moving parts within it are weak.

By *articulating* the impasse through the cartography (see **Figure 4. Moving parts**), the importance of what Paul *proposes* by starting the passage anew is crucially seen in the circulation of what *lies between* actor and network, not on either of the two extremes (i.e., actor or network). In other words, Paul does not single out any one actor for the cause of the breakdown and nor does he change the network setup (i.e., practice arrangement, conditions, and progressions). Although the coaching point of passing and moving in sequence remains the same, the point of coaching is still negotiated by actors who are constantly under construction. The point of difference lies in that drill-like constructions aspire towards a stable actor-network that is in sequence, whereas this is perhaps more difficult to achieve in game-like constructions.

Three contradictions

A first contradiction brought about by the cartography is that coaching still shares the same territory (i.e., physical space) with The Game. Practices take place on a third of an eleven-a-side pitch and often do not mimic The Game even when the lines on the Field of Play are used in convenience. For example, although the gate game takes place in what is normally referred to as the eighteen-yard box in The Game, this space becomes transformed into something else entirely different. The network setups or practice arrangements become new territories and only the relations that allow constructions to hang together are of importance. In other words, as the

eighteen-yard box is split into two halves with three groups, anything outside of the area is considered out of bounds, and the eleven-a-side goal is immobilised even though, and rather uncannily, it remains on the Field of Play.

A second contradiction is a tension between the coaches' *disciplining* players so that they remain in their positions relative to the whereabouts of the ball, which does not have a designated position. The material agency of the ball in connection with the player (quasi-object) results in some players becoming seduced or led astray from their positions in their desire to be the subject of the ball (quasi-subject). However, rather than seeing this as a problem of players who are undisciplined, it is seen as how coaches grapple with both human and nonhuman agencies.

A third contradiction is the enigma of what *is* coaching. Using the cartography as a new point of reference, the 'coaches' in the anecdote at the start of this thesis did not move through all the parts of the cartography of coaching. They appear to only have moved from The Game towards a field of practice (part one) and delegated authority (part two) to actors who were engaged in trials of strength (part three). The 'coaches' could be said to have been involved in the *construction* of assembling, disassembling, and reassembling the Field of Play but not in *fabricating* passages by recreating, giving an alternative or starting the passage anew after an interruption. The coaches in this thesis, however, did demonstrate by moving through all five parts of the cartography of coaching.

Conclusion: Fabricated constructions

In summary, coaching is constructed through *processes* of assembling, disassembling, and reassembling the Field of Play. Manufacturing is an apt expression for describing coaching as its own field of practice. It is precisely the contradictory position coaches have in The Game which grants them agency in fabricating *practices* by recreating a passage, giving an alternative, or starting the passage anew. But coaches must err on the side of caution and remain faithful to their fabricated constructions when making an association between The Game and their coaching practices.

Chapter summary

In the cartography presented above, I introduced five parts of coaching which we moved through with the help of Latourian ANT. Although each of the moving parts were discussed separately, they should be seen as being inextricably linked with one another, where no part is more important than any other. Indeed, coaches cannot *propose* unless they *articulate* through an *interruption* which is related to a *trial* of a *network* composed of *actors*. This recognises that coaching cannot be reduced to any individual part and nor is it irreducible to all five parts. The cartography is manufactured where coaching is a fabricated construction.

Chapter six | A relationist field of practice

In this chapter, I argue that coaching is a relationist field of practice resting upon five propositions derived from the cartography in Chapter five: nonhumans are ‘matters of concern’ (Latour 2004a); coaching is ontologically different from The Game; materials give shape to, and materiality shapes, practices; coaches intervene with alliances; and a ‘new’ sociomaterial competence is necessitated.

Proposition one: nonhumans are ‘matters of concern’

By not privileging coaches or athletes as the protagonists at the start of the cartography I can address the research question: *What actors make coaching practices possible?* When agency is granted to nonhumans, I noticed that they are just as important as humans in the assembling, disassembling, and reassembling of the Field of Play. Cones, balls, bibs, lines, and goals are actors in their own right because they too took their positions on the Field of Play. However, in coaching research materials are nowhere to be seen, often lying in ‘context’ waiting to be acted upon. Green (2009) argues that context is an essential element which should not be seen as extraneous to practices. Here, context is not some superfluity that acts as a background, but rather is an essential actor that allows practices to occur. If we continue to ignore and leave matter backgrounded, our understanding of coaching will be partial at best or misguided at worst. At the same time, I do not want to give the impression that nonhumans are more important than humans but rather that they too deserve existence in the accounts of coaching research. It does not make sense to talk about how coaches coach athletes without considering materials and materiality.

Nonhumans are ‘matters of concern’ (Latour 2004a) only when they are granted equal agency with humans in practices. This is made possible by the relationist ontology of ANT’s democratic view of actors which is contingent upon a ‘radical symmetry’ between humans and nonhumans (McLean and Hassard 2004). Now that coaching has been reassembled, so that both the social (delivery) and material (management) are assembled back together again from its practices, I can offer a response to others who have also claimed that coaching is a ‘relational practice’. However, such relations have only ever been taken as ‘existential’ or existing between humans. For example, Cronin and Amour (2015, 927) describe relationality in ‘collaboration with entities

including support staff, competitors, coaches themselves, athletes themselves and parents'. Potrac, Nelson and O'Gorman's (2016) 'relational perspective' for conceptualising grassroots football is also limited to human relations. The only time we are introduced to some of the nonhuman actors identified in this thesis, such as footballs and cones, is precisely when they are being put away at the end of the session! Perhaps coming closest to the relationist version of coaching purported in the cartography is Jones and Ronglan (2018, 910-912):

To coaches then, orchestrating relations becomes vital; a point which supposes the ability to carefully notice what is going on between players (i.e. in the inter-action). Consequently, the success of the action is never contingent on the individual, but rather on the network of relations within which such action takes place ... athletes get a better sense of themselves as being not just game players, but players in relation; in relation to others, to their location on the field of play, to objectives, and to expectations.

In the quote above, coaches are seen as orchestrating a 'network of relations' that crucially extends beyond the individual. Although Jones and Ronglan (2018) do recognise that athletes are 'not just game players', they do however appear to overlook the ontological difference between coaching and The Game when they refer to athletes being on the 'field of play'. This epitomises how entrenched The Game has become and prevents coaching from developing a language that is specific to its own field of practice.

Proposition two: Coaching is ontologically different from The Game

In what follows, I attempt to address the research question: *How is coaching ontologically different from The Game?* Nonhuman actors make coaching practices possible as coaches move from The Game towards a field of practice. The Field of Play transforms into a field of practice when coaches, who are armed with cones, mark new practice areas in which balls and players move in the absence of referees. Spending time explicating such differences between The Game and coaching might appear to be 'moot', but Tummons (2020b, 48) persuasively suggests that if such differences remain 'unchallenged' they might become entrenched and be presented 'immediately, unproblematically, and without mediation'. This is of significance since coaching does not yet have its own field of practice because materials and materiality remain *unchallenged*,

presented *unproblematically*, and *without mediation*. The ‘voice of coaches’ (North et al. 2020) and actions of athletes continues to be privileged over the agency of nonhumans, and this is subsequently why I proposed sociomateriality as an alternative theoretical lens for reassembling coaching from its practices in Chapter two. Arguably, without recognition of nonhumans as actors, coaching will continue not to have a map that is “truthful” to the territory of its practices.

But even as the materiality of materials are put back in, there is still a desire by the coaches in this thesis to cling to The Game, and especially near to the end of the session when they would organise a ‘game’ or ‘match’. This raises a question about how much or little the coaches’ practices should replicate The Game? Organising games at the end of sessions have been a feature of more conventional practice designs (Cushion 2013) but differs from the ‘match-like realism’ of Game Sense pedagogy (Light 2004) and the Constraints Led Approach (Renshaw et al. 2010). A recent example, and not just in football, is ‘Beat the Game’, which is a national pedagogical approach that attempts to develop ‘thinking players’ by ‘replicat[ing] the chaotic nature of rugby union performance’ (Avner et al. 2020, 5). This would suggest that coaches should try to develop players’ knowledge (i.e., epistemology) of The Game through game-like practices. Ford et al. (2010) make a distinction between drill-like ‘training form activities’ and game-like ‘playing form activities’ and encourage coaches to do more of the latter. But in their analysis of elite, sub-elite, and non-elite sport coaches, Ford et al. (2010, 493) point out that ‘players spent the majority of their time engaging in less relevant training form activities that did not replicate particularly well the demands of competition’. From this reading, one might say that the coaches in this thesis did not replicate particularly well the demands of competition as they too did a combination of drill-like and game-like practices. But such a reading is based on epistemological reasoning alone, where coaching practices share ‘transferable’ (Mulcahy 2013) knowledges and skills with The Game. Now that the materiality of materials has been put back in, The Game and coaching can be seen as ontologically different from one another.

The emphasis on The Game in practices is perhaps because I realised, with some ‘disconcertment’ (Verran 1999), that they both take place on the same Field of Play. This then raises a question about whether the eleven-a-side pitch still exists during coaching practices because they usually took place on a third of the pitch? Well, I could not argue that it does not exist, but Denison

(2010, 471), in speaking through a Foucauldian lens, argues that training plans are discursive practices:

Although it might appear to be more natural to run on beach than a track, once a sand dune is measured and made into a course is it really any more natural than a 400-metre oval? Don't both provide just as accurate a means for a coach to compare and to control his or her athletes' development through a carefully designed training plan?

This point captures the ontological difference between The Game and coaching that I am making here. Practices can take many forms as Denison so rightly points out. Running is not limited to the 'track' but can take place on a beach or something other, so long as it is oval shaped. This means that practices have an ontological reality which is crucially different from The Game. Continuing with the case of running above, in competitions the 'track' is the singular defining reality of performance (equivalent to an eleven-a-side pitch in football). However, what cannot be said is that the Olympic 100 metre event can take place on a beach or an eleven-a-side Game on a third of the pitch – as would be the case in practice. This might suggest then that The Game and coaching do not share the same ontology of human and nonhuman actors, and this is essential for coaching to be seen as its own field of practice.

In the Latourian ANT analysis of the cartography in Chapter five, the eleven-a-side pitch is at once a Field of Play that has its own *being* coexisting with the Laws of the Game, but it is also a field of practice which has yet a different *being* defined by the relation of actors belonging to coaching practices. Drawing inspiration from previous ANT studies, Mol (2002) argues that the medical condition atherosclerosis has four ontological *beings* as it moves from surgery, radiography, ultrasounds department and operating theatre. In each *being*, atherosclerosis is a different actor-network: first as pain in walking, second as narrowed blood vessels on an X-ray photo, third as Doppler readings of blood vessels and fourth as white paste scraped out of the blood vessel. Fenwick (2014), who focuses on the inter-para/professional practices for dealing with mental health crises, brings to attention different ontological worlds of paramedics and police. On the one hand, the ambulance is outfitted with medical equipment, assessment devices for clinical diagnoses and care. On the other hand, the police van has sirens, flashing lights,

handcuffs and breath analysers for crime response and public safety. Perhaps a more similar analogy to The Game and coaching is a doctor/paramedic and a qualified first aid person, or a police officer and a security guard. While the doctor/paramedic and the police officer are lawfully bound by their actions, a first aid person or security officer are bound by rules or a contract. Importantly, one would not call medicine first aid or policing security because they are organised around different purposes and practices. A similar multiplicity occurs on the Field of Play.

In moving towards a field of practice, I noticed how the eleven-a-side pitch has less importance than The Game. The Field of Play becomes displaced as coaches mark the new territory of practices with cones. Consequently, the Laws of the Game become perturbed by coaches who develop their own unwritten rules which are, for the most part, incomprehensible to the laws. Yet, some of the actors, such as the ball, eleven-a-side goal, and white lines, are still in keeping with the Laws of the Game. The coaches' rules evolve and develop in a fluid manner (Collins and Collins 2015) and cannot be looked up in the Laws of the Game, as they are invented by coaches themselves. Another difference is the absence of the referee to uphold these rules; although, players and coaches did call upon a spectral referee which reinforces how entrenched The Game is within practices. The coaches took the duties of the referee upon themselves, but there is ambiguity with how much or little their practices should uphold the Laws of the Game. Practices have their own discrete arrangements governed by coaches' self-referential set of rules of what they think the role of the coach should be. However, Abraham and Collins (2015) argue that such heuristic methods have led to an overreliance on experiential approaches to coaching and this might lead to a lack of professionalism in the decision-making of coaches in practices. In their study, coaches were inclined to intuitively draw upon personal theory or rules rather than established formal rules or theory. I am not proposing here that sport coaching should develop its own set of laws as the coaches' practices under study do not add up to a 'universal or normative truth of coaching', but rather they are specific to the 'local orderliness of interactions' (Corsby and Jones 2019). Corsby and Jones (2019) argue that coaching can develop its own 'occupational value and logic', but this value and logic is unconventional at least to the conventions of The Game. Instead of the Field of Play there is a field of practice; instead of the Laws of the Game there are unwritten rules; instead of play there are passages; instead of games there are practices;

instead of context there are actors. This is not to say that coaches cannot talk of The Game when coaching but if they do, they must *translate* the differences between them every time.

Proposition three: Materials give shape to, and materiality shapes, practices

In what follows, I address the research question: *How do materials give shape to, and in what ways does materiality shape, practices?* Only once materials are considered as actors can the effects of materiality be studied.

Materials give shape to practices through processes of assembling, disassembling, and reassembling the Field of Play. Zones of cones dotted across the Field of Play are delegated with authority to discipline players on staying within the boundaries of marked practice areas. However, unlike Santos et al. (2013), who use the expression ‘delegation’ for how the head coaches delegated authority to their assistant coaches, delegation in this thesis is extended to both humans *and* nonhumans. Actors are constantly delegated with authority by coaches when they transition from one practice to the next. Others have categorised delegation as an ‘other practice state’ (Harvey et al. 2013) that is different from playing and training states. This is somewhat like Lyle and Cushion’s (2017) management component that consists of handling resources, facilities, equipment and finances in the way that it is distinctive from the strategic coordination, planning and delivery components of the coaching process. In the cartography of coaching, however, delegation is seen as an alternative to the management component and is considered as an essential *part* in the delivery of coaching practices (see Chapter five, part two in the cartography of coaching).

Cones and bibs became ‘lieutenants’ (Latour 1992, 162) for holding the place of the white lines on the eleven-a-side pitch and bibs took the place of players’ uniform. Phelan and Griffiths (2019) refer to the marking of areas as ‘territorial personalisation’, where coaches create ‘self-expressive micro-geographies’ through the ways that they make use of physical spaces. In their study, the high-performance workplace is not seen as a ‘benign entity’ but rather is entrenched in ‘goals, beliefs and traditions’. While the coaches could not change the physical spaces due to the ‘material-economic arrangements’ of funding allocated to the centre, the coaches did manipulate the language, discourse and social relationships between individuals from the construction of their

practices. Similar to Phelan and Griffiths (2019), in this thesis, nonhumans are not seen as benign entities but as actors in their own right in the way that they are afforded equal agency with humans. Consequently, by studying the materiality of nonhuman agencies, some actors are seen as immobile, such as cones and goals; mobile, such as players; and others only become mobile when combined with another, such as balls and bibs. But as heterogeneous actors come together to form practice arrangements, immobile actors have a somewhat constraining effect on mobile actors, such as in the wall player practice, where players metaphorically became like a wall. Yet, in practices where the agency of players is not constrained coaches found it more difficult to control or discipline players. Importantly, this point suggests that materials are not inert matter, but ‘vital players’ (Bennett 2010) in coaching practices.

The coaches also manipulated or disciplined players by adding conditions and progressions. But unlike the written Laws, conditions are inventions of coaches manifested in the materiality of practices. Conditions are a prominent feature of the ‘Constraints Led Approach’ (see Chapter two), where coaches are expected to set the initial level of difficulty and players self-organise in practices (Renshaw et al. 2010). Passages are constrained to the level of difficulty that the condition presents. For example, in what one of the coaches under study calls the ‘gate game’, several conditions made it progressively harder for the players to pass through, such as five passes on the ball, an aggressive pass, and passing the ball across to the other group of attackers in under ten seconds. In this sense, conditions are seen as an ‘obligatory passage point’ (Callon 1986), where players must pass through the condition before they can move on. However, when progressions are added too frequently players might become undisciplined as there is increased ambiguity about whether the preceding condition is still in effect. Thus, translation work is needed for not only when coaches move from The Game towards a field of practice but also as a practice evolves and becomes progressively more different from the preceding condition. Indeed, Hall et al. (2016) suggest that coaches must explain the variations in the rules that are added to help players understand the new boundaries of a practice. In this way, coaches must be ‘practically wise’ (Standal and Hemmestad 2010) for making sound judgements about the conditions they introduce in practices. After all, coaches have no laws to fall back on for the way practices should be done.

Materiality shapes practices in ways that can make players undisciplined, especially when the ball is in connection with a player (quasi-object). This is consistent with Law and Callon's (1992) use of the 'network' metaphor which suggests that not only are actors shaped by networks, but they too shape the networks that they interact with. Practices can be well-constructed yet still collapse if discontinuities in passages occur. That is because any practice is a 'composition' that is put together and must be able to retain its heterogeneity (Latour 2010c). At any point, the composition of a practice can be undone when players are seduced (Gherardi and Perrota 2014; Serres [1985] 2019) or led astray from their position by the quasi-object. When practices remain stable or in continuity, particularly in drill-like practices, players are not seduced from their position as often. But in practices where a player's passage is not marked, there is greater risk of them becoming seduced by the agency of the ball in their attempt to be the subject of the ball or the quasi-subject (Serres [1980] 2007). Here, I noticed a tension between the players' positions and the agency of the ball. Players who are seduced away in their desire to be the quasi-subject risked their position being exposed. The disciplining of players to remain in their position is consistent with Mills and Denison's (2018) study who found that a desire for coach control led to increased instances of athlete docility. But I noticed that players do not have 'docile bodies' (Foucault [1991] 2020) because they are continually lured back towards the quasi-object. The desire for players to be docile is weak as coaches can only act 'at a distance' (Law 1987) when agency becomes 'distributed' (Bennett 2010) across the field of practice. At the same time, I noticed that the mouth of the eleven-a-side goal also seduced players even when it is not an 'obligatory passage point' for scoring a goal (Callon 1986). In Callon's (1986) seminal study on the depletion of scallops, the obligatory passage point was the first of four moments of translation ('problematization') that brought the fishermen, scientific colleagues, and the scallops into an alliance in order to 'induce' the scallops to multiply. In comparison with The Game where the goal becomes an obligatory passage point for players to score and win (or not), this is not always the case in practices. The material agency of the goal seduced players and sometimes I noticed that the coaches infrequently kicked balls towards the goal before the start, during and in the transition from one practice to the next. Headrick et al. (2012) identified the proximity of the goal as a task constraint to the intentionality of players and the ball in attacker-defender dyads in football. Three trials were staged from three positions: (1) attacking the goal; (2) midfield; and (3) attacking away from the goal. The positions nearest to the goals (1 and 3) had the greatest

influence on the intentionality of the players, while the midfield position (2) was the least impactful. Consequently, Headrick et al. (2012, 252) recommend that training designs:

replicate the desired performance context ... providing reference objects such as goals, corner flags, and line markings instead of ambiguous cones or poles ... [as these are] ... specific [to the] area of the field and/or game scenario.

Given that the practices of the coaches in this thesis usually took place on either end of the eleven-a-side pitch, the proximity of the goal might have acted as a constraint, and crucially even when it was not integral to the practice. It might also be said that the coaches did not replicate the desired performance context given that they often used cones and poles. But cones and poles are far from ambiguous objects as they had been delegated with authority by the coaches in a field of practice. Thus, intentionality also becomes 'distributive' (Bennett 2010) in the materiality of practices, where cones and poles exceed their status as singular objects because they are always in relation with other agencies. If cones and poles are erased from the coaches' practices in this thesis, then they would surely become more, not less, ambiguous.

Finally, materials *speak* in ways that give coaches information about their practices. By focussing on materials, coaches have a more immediate and *objectful* source of feedback. For example, cones tell coaches how well players keep the ball in rather than out of the practice. Bibs help coaches differentiate between groups of players within a practice. The ball lets coaches know who is, or is not, in possession. Taken together, the materiality of practices grants coaches' agency to make more informed decisions about whether a players' position in a passage is weak (i.e., to be seduced) or strong (i.e., or not to be seduced). If weak, coaches might then choose to intervene, but they do not do so on their own.

Proposition four: Intervening with alliances

Here, I address the research question: *How can intervening be seen as a relational accomplishment?* According to Callon and Latour (1981, 292, emphasis original), 'an actor is strong in so far as he or she is able to intervene ... [as strength is] ... *intervention, interruption, interpretation and interest*'. When an interruption occurs in a passage and coaches are called into action (see Chapter

five, part four in the cartography of coaching), they do not intervene alone but with ‘alliances’ (Harman 2009) of human and nonhuman actors. However, to do so comes at the expense of the fast paced, flowing Game.

When coaches step in, everything moves much, much slower than in The Game. Players slow down and the ball slows down as coaches seem to have zapped the energy and life out of The Game. Perhaps coaches are better thought of as ‘slowcoaches’ who engage in what could be more aptly called *slow coaching*. Up until the intervention, players seemed to be quite content participating in sport like the coaches in the opening anecdote (see Chapter one), but when coaches intervene players are suddenly reminded that they are no longer playing like in The Game. In other words, unless coaches intervene in a practice, then they have not moved through all the parts of the cartography of coaching in Chapter five. The Laws of the Game are not stopping coaches from stepping in this field of practice. Like referees, coaches have the authority to stop The Game, but their intervention is even slower. However, this slowness is sometimes to the detriment of players who sometimes sighed in exasperation when coaches temporarily froze practices.

The coaches under observation intervened by saying ‘freeze’ or whistling at an opportune ‘moment’ close to, or soon after an interruption occurred in a passage, and they subsequently set out ‘an investigation for what might have gone wrong’ (Denison 2007). An interruption refers to a difficulty that ‘stops us in our tracks’ where we are ‘wily’ in finding a path that does not exist (Lather 2001). O’Connor, Larkin and Williams (2018) define a ‘freeze in position’ as inactivity, where players remain in their current position. An intervention recognises the importance of coaching knowledge for how coaches make a ‘professional judgement’ (Abraham and Collins 2011) based on their observations, evaluations, and reactions to ‘goings-on’ in a practice (Abraham et al. 2014). Social interactions are also important for what coaches’ ‘notice’ (Jones and Crosby 2020) or ‘see’ (Jones et al. 2013) in their monitoring and observation of practices. But what these interventions fail to capture is the description of what nonhuman actors *do* in moments of when an interruption occurs in a passage. In this thesis, an intervention is preceded by an interruption which is followed by coaches either recreating a passage, giving an alternative, or starting the passage anew. Intervening is seen as a necessary part of coaching, whereby the

purpose is helping players move from a weak to a stronger position. By intervening with alliances, coaches engage in relational work which consists of *translating the trails* of an interrupted passage.

Relational work consists of recreating a passage, suggesting an alternative, or signalling for the passage to start anew. Coaches move closer to the point of discontinuity as they signal an intervention. Recreating passages involves coaches reviewing a passage called into question up to the point of an interruption. This is similar to what Hemmestad and Jones (2019) call a 'progressive repair' for when a passage 'does not work out the way it should'. Progressive as the repair work involves moving from a discontinuity to continuity. This insight further supports the ontological difference between coaching and The Game because in the latter coaches would not be able to intervene and then recreate a passage, give an alternative, or start the passage anew. The Game simply flows irrespective of coaches' interventions. This point has been coincidentally captured by Law (1992, 1) when he says: '[j]ust occasionally we find ourselves watching on the sidelines as an order comes crashing down'. Although he was not speaking of football, his point is helpful in clarifying the ontological difference in the way that it makes clear that coaches are perhaps quite helpless in The Game as they are restricted to the sidelines, but this is not true when coaching because they are given free rein to act and modify the eleven-a-side pitch. Following on from Law's (1992) quote, perhaps the next sentence might be something like this: 'Back to the training ground then'.

Alternative passages provide a different passage from the point at which the interruption occurs. This links to the notion of emergence, where the intervention signals a desire for improving, anticipating, and acting towards a better passage. At other times, the coaches start the passage anew that is signalled when they say, 'game's dead', and the players subsequently return to their starting positions. This would be like restarting The Game anew every time! In the *trials of strength*, a trade-off was identified between the coaches' desire for players to be 'docile' by staying in position (Denison 2007) and the players' desire to be the quasi-object. However, if players stay in position, they still might not receive the ball but, at the same time, if they don't, they might be out of position which could be to the detriment of the practice. Intervening, then, becomes a necessary part of facilitating 'self-insight and reflection' (Jones et al. 2015, 15) for players who might perform in a certain way without knowing its full consequences.

The coaches in this thesis ‘noticed’ (Jones et al. 2013) three actors that pose a risk to the actor-network: players on and off the ball, the seven and eleven-a-side goals and the middle of practices. First, the coaches recreated a passage to show how players’ bodies posed a risk even when they were not close to the ball. The intervention demonstrates how risk is ‘distributed’ (Bennett 2010) across the field of practice but also emphasises the importance that coaches place on players to be ‘disciplined’ (Denison 2007) to their positions. Second, an alternative passage is proposed for when players are ‘seduced’ (Serres [1985] 2019) to shortcut their passage by going direct to the seven or eleven-a-side goal without forbearance of the practice aims. The intervention makes players more aware of the importance of passing through others rather than going straight towards the goal. Third, the coaches started a passage anew after they highlighted the players’ lack of awareness or discipline to their position when they ‘bunched’ (coach’s word) together around the ball in the middle of practices. Interventions grant coaches the ability to adapt practices through what Renshaw and colleagues (2010) call ‘task constraints’, so that some players maintain width in position in the field of practice.

Finally, intervening with alliances demonstrates relational work between bodies, objects, materials, and spaces. This is demonstrated from the way that coaches call upon human and nonhuman actors that are ‘composed’ (Latour 2010c) within a network of relations. But rather than seen as inhibiting, interventions give an indication of how coaches too are grappling with the agency of things to stabilise the actor-network. Indeed, attending to how coaches attune to materiality complements both the cognitive (what they ‘know’) and social (what they ‘see’ and ‘notice’) dimensions of coaching practice. But such relational work necessitates a ‘new’ sociomaterial competence that can better attend to the ontological dimension of what things *do* in practices.

Proposition five: a ‘new’ sociomaterial competence

Here, I consider the research question: *How can coaches develop a ‘new’ sociomaterial competence?* Coaching well has most often been considered an attribute of coaches who have competency based on their agency alone. Others have used similar phrases to express how coaches ‘act well’ (Hemmestad et al. 2010) or for when players ‘play well’ in games (Corsby and Jones 2020). But

to coach well in this field of practice necessitates a ‘new’ sociomaterial competence, for better attending to how coaches attune to nonhumans in practices.

Any coach can intervene but when, what and how they do is of crucial importance. When coaches intervene depends on the significance of the interruption in the passage. Given that interruptions are a characteristic feature of participating in sport, coaches must be selective with when they choose to intervene because too many interventions can be potentially disruptive. If an interruption does warrant an intervention, what coaches then *propose* (i.e., to recreate a passage, give an alternative or start the passage anew) depends on the circumstances of the interruption. Equally important is how coaches *articulate* what they propose to the players. If what they propose does not articulate the interruption well, the intervention might be potentially disruptive. If, however, coaches propose by faithfully articulating the movement of actors that are associated with an interruption, then the intervention might be productive. Thus, coaches are expected to be ‘situationally literate’ for responding to unfolding events as they happen (Jones and Hemmestad 2019). But how can situational literacy be extended so that nonhumans have competence for *when*, *what* and *how* coaches intervene?

The cartography in Chapter five calls for a more local and situated sociomaterial competence. Corsby and Jones (2017) and Collins et al. (2015) argue against a competency based on the rationalisation of what coaches *should do*, but rather urge for more attention on what coaches *could* or *do*. This is consistent with manufacturing processes of construction and fabricated practices (see Chapter five, part five in the cartography of coaching). For example, the Field of Play becomes transformed when practices are assembled, disassembled, and reassembled, and at the same time new passages are invented by coaches when players are encouraged to think *differently* about their original passage during an intervention. Sociomaterial competence means that no actor in the network is more important than any other when an intervention is in progress because agency is ‘distributed’ (Bennett 2010) across the field of practice. Coaches speak on behalf of many other human and nonhumans.

An interruption during a *trial of strength* is translated by coaches who carry out a ‘triage’ (Latour 2004b) based on ‘relevant’ (Hindmarsh and Llewellyn 2016) *actors* within the *network setup*. When

articulating by speaking on behalf of the actor-network through an intervention, the coaches have to be as ‘concrete’ as possible about the actors they *propose* during a fabricated passage. Lagestad et al. (2017) argue that elite coaches use more ‘concrete feedback’ when articulating what ‘players should be doing’ in comparison with an amateur coach. Although they do not specify what they mean by the expression ‘concrete’, the examples given between the two coaches suggest that the feedback from the elite coach is more specific to materials (ball), actions (pass, touch), positions (defender) and movements (moving, run, harder, speed, slow, forward, stops, move back). In contrast, the amateur coach gives fewer concrete descriptions of the materials, actions, movements, and no indication of players’ positions. While such differences between coaches can be explained from their expertise (Nash and Sproule 2011), it can also be an indication of sociomaterial competence; that is, how well they attend to the ontological dimension of what things *do* in practices. However, when coaches recreate a passage or give an alternative without also demonstrating through their materiality (i.e., without the ball), they might be seen as being ‘coach-centred’ in the way that they quite literally speak on their own. In this sense, the ‘coaches voice’ (North et al. 2020) becomes the dominant actor instead of letting things *speak* through their own agency. Yet, the ball *speaks* through its passage, players *speak* through their bodily movements, cones *speak* for how a practice hangs together. Thus, a sociomaterial competence emphasises how coaches speak through materiality to ensure that agency remains ‘democratic’ (Harman 2009) among all actors.

Coaching well is not solely the competence of coaches because that would be to mistake intervening as something that is done only by coaches when really, they speak on behalf of an assembled actor-network. This is not to say that the decisions coaches make are not important; they are, but the importance always lies in how decisions are mediated by a ‘network of relations’ (Jones and Ronglan 2018). However, the network of relations includes both human and nonhumans. The cartography developed in Chapter five has application to the delivery of coaching for testing how other coaches articulate sociomateriality from what they propose in their field of practices.

Chapter summary

The cartography of coaching yields much promise for attending to how coaches attune to the ontological dimension of what things *do* in practices. In this chapter, five propositions were presented, and each were compared to the research questions set out in Chapter one. First, nonhuman actors are ‘matters of concern’ (Latour 2004a) which allows coaching to be conceptualised as a field of practice. Second, coaching and The Game are seen as ontologically different from each other and any crosstalk between them should be translated every time. Third, materials and materiality give coaches crucial information about their practices and helps them to make informed decisions for when to intervene (or not). Fourth, intervening, which can be differentiated from non-intervening contexts like The Game, is a relational accomplishment involving ‘alliances’ (Harman 2009) of both humans and nonhumans. Fifth, a ‘new’ sociomaterial competence is necessitated that more faithfully attends to processes of construction so that coaches are better prepared to fabricate well. In the next chapter, I translate the cartography of coaching into the territory of practices so that other coaches can become more object-oriented.

Chapter seven | Becoming an object-oriented coach

Despite the promise of the cartography in Chapter five, it is not enough on its own as coaches might be unfamiliar with how to translate the map into the territory of their practices. What is the point of identifying the *parts* of something if others don't know how to *move* them? For this reason, I argue that coaches ought to be object-oriented when translating the cartography of coaching into the territory of their own practices. To do so, I first introduce 'object-oriented coaching' as a response to criticisms that 'coaching' remains an ambiguous term (Cushion and Lyle 2016). Second, I translate the cartography of coaching into the territory of some of the coaches' practices in this thesis. Here the territory is articulated by the relations that allow practices to hang together rather than superimposing them on the Field of Play. Although quite perplexing on first impressions, the territory of practices is more "truthful" for helping coaches become object-oriented. Third, I discuss some implications for practice.

Object-oriented coaching

In response to the ambiguity of the term 'coaching' (Cushion and Lyle 2016), object-oriented coaching aims to help coaches stay at the local sites of their practices. Therefore, I have put the phrase 'object-oriented' in front of coaching as it forces coaches to ask: What objects become delegated with authority on the Field of Play and transform it into a field of practice? How do they form practice arrangements? By doing so, coaching researchers can better attend to the objects of circulation in practices.

Before proceeding, I should point out that object-oriented coaching is not a theory as that would be antithetical with an ANT study. As put by Latour (1999b, 19-20), ANT is a 'method and not a theory, a way to travel from one spot to the next ... not an interpretation of what actors do simply gloss in a different more palatable and more universalist language'. In the cartography, coaching starts with 'objects' when coaches move from The Game towards a field of practice by delegating authority to human and nonhuman actors. Here, my focus is on material objects: cones hold the place for the white lines on the eleven-a-side pitch and mark the boundaries of the new field of practice; bibs distinguish between the team of players; seven and eleven-a-side goals become an 'obligatory passage point' (Callon 1986) for players to pass through; and the ball

becomes a quasi-object as a player is transformed (even if temporarily) from players who desire to be the subject of the ball (quasi-subject). Practices are defined by these arrangements and have their own rules, conditions, and progressions. Taken together, objects constitute the construction processes of assembling, disassembling, and reassembling of the Field of Play.

Practices are ‘oriented’ in relation to the objects of construction. Practice arrangements become *trials of strength* to see how well the players can orient themselves to the objects. Players are ushered into practice arrangements and must orient themselves to stay within the boundary of cones, when to pass the ball to the designated (bibbed) player, when to shoot the ball towards the seven or eleven-a-side goal, or whether to pass through the condition (or not). In its current form, the definition of coaching takes for granted that players already know how to be object-oriented in different practice arrangements. However, when objects are granted agency equal with players, the authority of delegation and the effect of materiality is made ‘readable’ to coaches (Corsby and Jones 2020). I noticed when there are fewer objects setting the boundary of a practice players might become undisciplined; for example, in practices where there are fewer cones marking players’ passages or when conditions do not act as an ‘obligatory passage point’ for players to pass through (Callon 1986). In such practices, players frequently become ‘seduced’ (Serres [1985] 2019) or led astray from their position. The tension between the players’ positions and the ball suggests that players find it somewhat difficult to be object-oriented. What is important for coaches here is not the ball or player but the passage that lies *in-between* them (Latour 1999a, 310). Therefore, an intervention is seen as important for when an interruption occurs in a passage.

An intervention, which is one of the parts of ‘coaching’, follows an interruption and is expressed as a discontinuity in a passage which can be attributed to either humans or nonhumans. The coaches then call upon actors to recreate a passage, give an alternative or start the passage anew. To do so, the coaches are expected to be object-oriented so that they remain ‘faithful’ to the *construction* of the passage up to the point of the interruption. This will allow for subsequent *fabrications* of what the players *could do* from what *happened*. But there is a difference between the action of the players and coaches for how they are object-oriented. On the one hand, the coaches most often *speak* on behalf of the actor-network when they intervene in a passage. On the other

hand, players *perform* through their bodily actions which might partly explain why coaches' questioning was mostly rhetorical during interventions (Cope et al. 2016). The purpose of coaching during an intervention is for coaches to help players become more object-oriented after they 'notice' (Jones et al. 2013) or 'see' (Jones and Corsby 2019) an interruption in a passage, which then leads to some actors becoming reoriented by coaches. An intervention is a way for understanding how coaches grapple with human and nonhuman agencies in their practices.

Neither coach nor athlete-centred

Since the coaches under observation most often used instruction, this might suggest that they have a more 'hands on' approach than the coaching pedagogies reviewed in Chapter two. But as the coaches are working with children and youth players, who are susceptible to becoming seduced from their position, they often intervened to help players move from a weak (i.e., seduced) to a stronger (i.e., not seduced) position. The emphasis on instruction contradicts athlete-centred approaches, such as Game Sense pedagogy (Light 2004), which encourages fewer direct interventions by coaches because there is greater emphasis on players finding their own solutions in practices. Thus, the coaches might be considered as being coach-centred (Cushion 2013) as their actions 'control[ed]' the players' movements (Mills and Denison 2015). Avner et al. (2020, 11) define 'coach-centric practices' when coaches 'dictate what they [players] can or cannot do'. But even careful construction through processes of assembling, disassembling, and reassembling the Field of Play can still dictate what players can and cannot do, even without coaches having to intervene in a passage. A key difference between object-oriented coaching and coach or athlete-centred approaches to coaching is to do with agency. While in object-oriented coaching any object can exert agency, coach or athlete-centred approaches privilege the agency of humans. Consequently, coaches and athletes are privileged in either case, but perhaps even more problematic is what happens to the agency of the other when one is privileged. For example, how much agency do athletes have when coaching is coach-centred, or vice versa? There seems to be a problem with finding a compromise so that both coaches and athletes have agency in coaching, but neither of these approaches can accommodate such a position because coaching is *centred* to someone. However, I propose to have overcome this problem of privileging agency in coaching by using the hyphen between the phrase object-oriented: to whom or what depends on the passage of practice at hand.

I differ in my interpretation of what it means to be 'coach-centred'. While the studies above view coach-centred coaching when a coach dictates what players can or cannot do through instruction (Ford et al. 2010; Harvey et al. 2013), I conceive it as a coach who, when intervening, does so without orienting themselves to objects. In other words, to be coach-centred is a coach who speaks on their own and *not* on behalf of an object's own agency. For example, this could be when the coaches demonstrated a practice by pointing to where the ball should be passed to and from rather than using the ball itself. In this way, coaches cannot possibly be object-oriented as they do not, so to speak, orient themselves to anything, except their own conceptualisation of what coaching is supposed to look like. The element of instruction is crucial for coaches but only so long as the actors can express agency in their own way.

Dare I say, but what would be the point of intervening if players are to find their own solutions in practices? The construction of a practice is insufficient unless there is fabrication, as without the latter one might be considered as only facilitating the participation of sport which is reflected in the anecdote of the coaches at the start of this thesis. Anyone can claim to be a 'participation coach' but is this enough? Unless there is an intervention, players might continue to be seduced from their positions and become less object-oriented as a result. Coaches replace the element of chance that one finds in The Game because they have the authority to intervene by *fabricating* through a recreated passage, giving an alternative or starting the passage anew. The more players become object-oriented in a practice, the less a coach must intervene, and so the goal is for coaches to gradually become less 'hands on' and more 'hands off'. But to merely hope that players will become object-oriented in The Game is not enough. Therefore, the timing and nature of how coaches intervene is crucial so that subsequent fabrications are faithful to the construction of the reassembled Field of Play. Otherwise, the 'coaching moment' is gone, and the next passage is already in progress like in The Game. According to Latour (2004c, 206) the body 'becomes more and more describable as it learns to be affected by more and more elements'. This means that for players to be articulate depends on how they learn to be oriented by others, both human and nonhuman. For coaches, this means that their practices must be (re)oriented in such a way so that a player can learn to become sensitised to objects.

Translating the cartography of coaching into the territory of practice

To overcome my ‘disconcertment’ (Verran 1998) of coaching sharing the same territory with The Game on the Field of Play, I will first articulate the territory from some of the coaches’ practices in this thesis. Here the territory is articulated by the relations that allow practices to hang together rather than superimposing them on the Field of Play like Camp Football’s session plans in the opening anecdote at the start of this thesis. By doing so, I argue that the cartography will offer a more “truthful” map to the territory of coaches’ practices, so that other coaches can stand on firmer ground.

To generate a map of coaching that is “truthful” to the territory of practice, I draw from ANT’s work related to spatiality. According to Law (2002, 102), ANT ‘sets spatial limits to its understanding of objects – and to the space these inhabit and enact’. The eleven-a-side pitch can be said to have a relatively stable topology given that its shape holds the network of actors together well. It can thus be said to be in topological equivalence as the dimensions of the pitch are consistent with the Laws of the Game. However, coaching practices have no such limit to the possible rules and spaces that can be created, nor at the very least is it confined to the shape of the eleven-a-side pitch. Rather, it is only confined *within* the space of an eleven-a-side pitch. In other words, there is not one privileged structure that governs all practices like that of an eleven-a-side pitch which acts to govern The Game. Consequently, the eleven-a-side pitch loses its ‘shape-continuity [and a] loss of identity’ (Law 2002). In this sense, no shape is necessarily privileged given that materials give practices shape in many ways. Rather, it might be better to think of practices having ‘mobile boundaries’ in the now fluid space of the eleven-a-side pitch (Law 2002). Unlike the eleven-a-side pitch which fits the network typology as its shape remains immutable to the Laws of the Game, coaching practices are shaped by coaches who invent their own fluid cartographies.

Drawing inspiration from the fluid metaphor, an alternative landscape can be depicted as a way for mapping the territory of practice. Inspired from ANT’s relationist ontology, I visualise several fields of practices from the coaches under observation as an alternative to being superimposed on the eleven-a-side pitch (see **Figure 9**. *Field of practices*). It no longer makes sense to use an eleven-a-side pitch given that the practices only ever took place within the confined spaces of a third of

the pitch. It is assumed that many sporting organisations superimpose practices on the eleven-a-side pitch, but this is misleading because the Field of Play becomes displaced by coaches when they move from The Game towards a field of practice (see Chapter five, part one in the cartography of coaching). Each field in **Figure 9** helps to keep the focus on the practice at hand rather than on the eleven-a-side pitch which has been excluded. From the many different practice arrangements shown, there is not one shape that acts to govern all others like that of the eleven-a-side pitch. The Laws of the Game are not immutable here. Rather, coaches are the cartographers of practices that take many different forms. And neither do all the practice arrangements add up to make one universal Field of Practice, but rather form a constellation of practices. The cartography of coaching recognises the important ‘handwork’ which Bell and Vachhani (2019, 11) refer to as a ‘craft [which] is not just a means to an end but an action of co-presence that involves the hand and materials unfolding’. Latour (2012, 3) argues that this ‘craftmanship’ escapes our attention because it is so ‘material and mundane ... so practical, so modest, so pervasive, so close to the hands and the eyes’. But by bringing the territory of practices to life in this way, the cartography of coaching in Chapter five has the potential to help coaches become more object-oriented in their practices. Otherwise, coaching will continue to be superimposed on the Field of Play, and its field of practices along with materials and materiality will continue to be forgotten.

I now consider how the cartography of coaching can be translated in the territory of practices (**Figure 9. Field of practices**). By presenting some of the coaches’ practices in this thesis and examining them using the five moving parts of the cartography, critical discussion can be generated surrounding the significance for how other coaches might fabricate passages. Unlike conventional designs which are superimposed on the Field of Play, each field has been articulated by its own construction and ‘cut’ (Strathern 1996) from their marking of cones which are depicted as white lines. The blue lines trace the circulation of the ball’s agency in connection with the player (quasi-object), while the red lines signal an interruption with another group in possession. The blue and red lines are angled to show when another subject is on the ball (quasi-

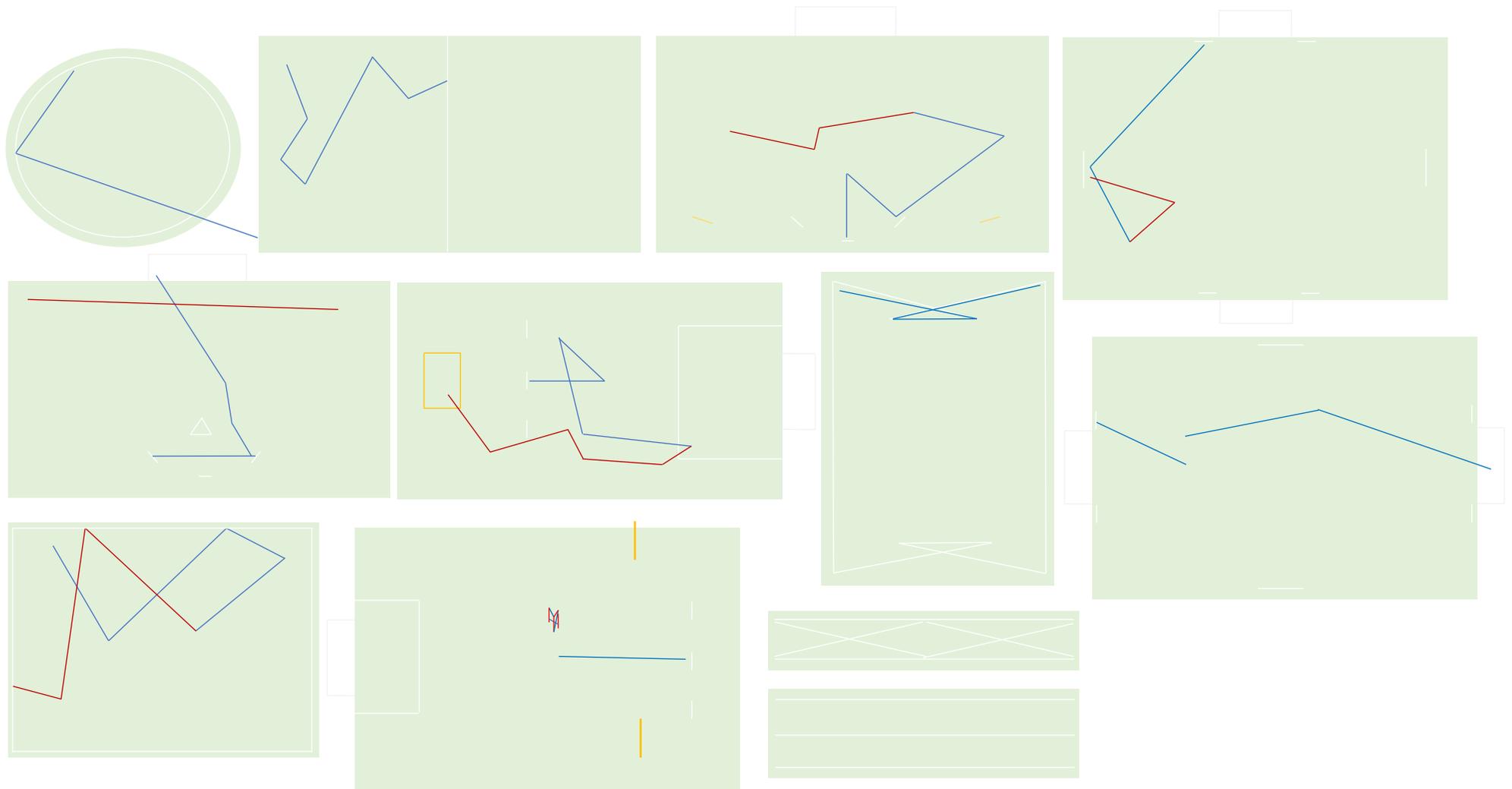


Figure 9. *Fields of practices. Each individual field is a reconstruction of some of Paul and George's practices. Particular attention is given to cones depicted as white lines, and the movement of the quasi-object depicted as blue and red lines.*

subject). However, I recognise that by showing the agency of the ball and cones in this way involves what Law (2011, 14) calls ‘distorting simplification’ in the way that the schema is not a ‘faithful representation of what it claims to depict’. Nevertheless, the fields of practices already demonstrate the first, second and third parts of the cartography of coaching: coaches have moved with *actors* from The Game towards a field of practice (part one); actors have been delegated with authority by coaches in specific *network setups* (part two); and passages show *trials of strength* (part three). Before moving to intervene (part four) or manufacturing (part five), I will give an indication as to whether the actors are ‘well-aligned intermediaries, making no fuss and no history and lending themselves to a smooth passage, or full mediators defining paths and fates on their own terms’ (Latour 1996c 176). We came across intermediaries and mediators in Chapter three: an intermediary is an actor or series of actors that transport action without any transformation in the network and so their inputs are enough to define their outputs (like a black box), whereas a mediator is an actor or series of actors that cannot be black boxed because they must be translated every time. Mediators and intermediaries allow for the translation of the cartography in each field of practice.

Starting top left in **Figure 9**, we first get a sense of when balls leak outside practices (blue line). Cones become a mediator when balls and players leak outside of arrangements, as we are reminded of the mobile boundaries which contrast with the white lines on the eleven-a-side pitch. Cones are a mediator in the first part of the cartography in Chapter five for marking the departure from The Game towards the field of practice which must be negotiated every time. Unlike the laws, which act as an intermediary for how The Game is to be played, coaching is ‘made of mediations, of transportation by deformation’ as it has no such laws (Latour 1996c, 179, emphasis same). Next, and to the right, there is a string of five passes in the gate game (blue line). In this case, cones return to be an intermediary as the ball’s passage remains uninterrupted. In the third part of the cartography in Chapter five, cones become a mediator in the way that they mark the distinction between The Game and the field of practice, but they then returned to be an intermediary during a *trial of strength* for keeping players within the boundary of the practice area. Third, there is an interception from a defender (when the blue meets the red line). Here, the ball becomes the mediator as it signals a change of roles between the quasi-object (attacker) and quasi-subject (defender). Fourth, a wall player becomes enrolled from the left flank (blue to red line).

The wall player becomes a mediator as they transform from being, in a metaphorical sense, like a wall to a mobile player. The coach adds conditions or ‘little tricks’ to force players into making a detour or else they face a *penalty*, such as losing possession of the ball. If conditions are undone, as in the example of the gate game of five passes (see Chapter five), the coaches can increase the levy by making the passage harder for the players to pass through (i.e., the obligatory passage point). Fifth (second row), the blue line highlights one of the many occasions when some of the players are not ‘seduced’ (Serres [1986] 2019) yet still missed the ball as it was gathered by the crosser on the opposite flank. The ball returns to be an intermediary. Indeed, Latour (2005) argues that mediators can return to be intermediaries again and intermediaries can transform back into mediators. Sixth, the defenders intercepted the ball (blue to red line) and score the equivalence of a goal by stopping the ball inside the orange box of cones. Here the orange box of cones is a mediator for what is a *goal*. Seventh, the ball moves from cone to cone in a drill-like sequence (blue line). The ball, players and cones are intermediaries as drill-like practices aspire towards a stable actor-network and only if an interruption occurs in the sequence will an actor become a mediator. Eighth, the ball (blue line) is enrolled near the left seven-a-side goal and after two passes the player shoots the ball in the seven-a-side goal. However, the goal is ruled out because the group in possession did not pass through the condition of the wall players prior to scoring. This is perhaps one of the many occasions when players are seduced by the material agency of the seven-a-side goal in playing narrow without forbearance of the practice aims. The condition of enrolling wall players becomes the first mediator in the form of an obligatory passage point (Callon 1986) to pass through before scoring on goal (second mediator). Ninth (third row), both groups make passes out to the wall players who remain an intermediary as they stand on the white line in a metaphorical sense like a wall (red to blue line). Tenth, a breakdown in the attacking versus defending practice has occurred in the ‘middle’ of the practice. The ball becomes a mediator as the player is transformed by their connection with the ball (quasi-object) and so too are the players off the ball who attempt to be the subject of the ball (quasi-subject). Indeed, this is perhaps why players become seduced away their positions to be the quasi-subject. Light (2013) brilliantly captures this through an analogy of an under-nine football Game, where the twenty players are ‘crowded like bees around a honey pot hacking at the ball’. For the group in possession of the ball the question becomes: How well can they move the ball to transform from a weak

(i.e., seduced) to a stronger (i.e., not seduced) position? Eleventh, Paul and George's warm up practices are lined by cones. Both the players and cones are intermediaries.

Although I have talked through each passage, several questions remain unaddressed: Does the interruption (part four) warrant an intervention by the coach? If the coach does intervene, what should they *propose*? And if they then choose to fabricate (part five), what should they *propose* and how should it be *articulated*? If the coach does choose to intervene, they transform into a mediator because up until that point they are an intermediary like on the sidelines in The Game. But when, what and how coaches intervene is not for me to decide as that would, according to Latour (2005a), confuse their (coaches) 'job description' with mine (analyst), as the inquirer's role is not to decide how actors should be made to act but rather it is to better understand how actors act. Thus, the cartography can be translated into the territory of practice but for coaches to do it well will depend on whether they are object-oriented.

Implications for practice

There are three implications of translating the cartography of coaching in other coaches' practices: (1) developing coaches as cartographers; (2) induction to the seduction of things; and (3) greater support/education on processes of intervening with alliances.

Developing coaches as cartographers

A first recommendation is to develop coaches as cartographers so that they can *move* through the first two *parts* of the cartography: moving from The Game towards a field of practice and delegation (see Chapter five for a summary of the first two moving parts). Developing coaches as cartographers recognises the importance of construction in assembling, disassembling, and reassembling the Field of Play. Coaches become cartographers when the Field of Play transforms into a field of practice in which they delegate authority to human and nonhuman actors. Coaching researchers have perhaps moved too fast, as they have taken for granted these moves in which an assembly of objects hang together to form practice arrangements. This is overcome by the fields of practices in **Figure 9** which emphasises the many different practice arrangements of coaching. The coaches under observation are familiar with the 'handwork' (Bell and Vachanni 2019) of setting up practices, but for others who are new to coaching, it might be their first time to

encounter such objects in such specific configurations. This might lead to what Latour (2004b) calls a state of ‘perplexity’ for coaches who are unfamiliar with how the actors perform together in the ‘composition’ of a practice (Latour 2010c). However, as coaches become more confident, they will be better prepared to delegate authority to human and nonhumans.

As the title of this thesis indicates, by following the *moving parts* coaches are ‘coaching with Latour’, where Latour is the ‘spokesperson of the nonhuman actors’ (Bloomfield and Vurdubakis 1999, 642). This cartography acts in a similar way to what the laws do for keeping the organisation of The Game somewhat stable, yet still recognises that the laws are transportable while The Game is mobile and messy. However, for the cartography to become ‘mobilised’ (Callon 1986) within coaches’ practices it will need to be ‘localised’. Unsworth and Tummons (2020) detail the localisation of how a new government initiative called the ‘mastery approach’ for educating pupils on mathematics becomes localised through Callon’s (1986) four moments of translation: problematization, interestment, enrolment and mobilisation. In each moment that the policy becomes *translated* there is a localisation in the actor-network. Of particular interest here is the last moment for when the initiative becomes localised in the school classrooms because as it did, the initiative was ‘continually disassembled and reassembled into new material representations’, with some teachers showing ‘resistance’ (Unsworth and Tummons 2020, 12-3). I recognise that there is likely to be some resistance by coaches in the mobilisation of the cartography proposed here. However, coaches are encouraged to put the cartography into practice so that they can more carefully wade through the moving parts of coaching.

Induction to the seduction of things

A second recommendation is for coaches to be inducted to the seduction of things, so that they can begin to take ‘notice’ (Corsby and Jones 2019) of social and material relations in practices. ANT’s relationist ontology offers a way for attuning to both human and nonhumans and recognises that *trials of strength* produce effects that can have significant consequences for when, what and how coaches intervene and fabricate. Coaching researchers have not brought to attention the effect of nonhuman agency on practices but the third, fourth and fifth parts of the cartography offer a way to overcome this shortfall.

I borrow the phrase ‘induction of seduction’ from Gherardi and Perrotta (2014, 139), who describe it as ‘how professionals undergo induction into the organization while they undergo seduction by the profession’. Induction is derived from the Latin etymological roots of the term ‘*in-ducere*’, which is composed of the verb ‘*ducere*’ that means ‘to lead’, and the preposition ‘*in*’ which denotes ‘place change’. On the one hand, Gherardi and Perrotta (2014) argue that both human and nonhumans are crucial to the induction of professionals to keep them along the right path into an organisation. On the other hand, they give an example of seduction in a small private medical organisation where professionals are seduced or led outside the normal path by a community of professionals. In this thesis, a tension is visible between the players, who are inducted into practices by coaches along the straight and narrow path of what they envision but are led astray in passages by the seduction of the ball, seven and eleven-a-side goals and the middle of practice areas. Three key points were identified by following the quasi-object:

(1) Players are seduced away from their positions by the movement of the ball. In practices, the attention of coaches and players who are off the ball is on the player in connection with the ball (quasi-subject). However, there is a tendency for some players to become seduced by the ball to be the subject of the ball (quasi-subject). The coaches referred to the players as ‘bunching’ (coach’s word) and other related terms that captures the movement of players who kept coming back into the ‘middle’ of the practice or to where the ball is located. When players are seduced (or not), coaches might intervene to review the interruption by recreating a passage, giving an alternative, or starting the passage anew.

(2) The quasi-object is associated with ‘danger’ (coach’s word) as other players also want to be the quasi-subject. But to prevent practices from becoming potentially dangerous the coaches demonstrate how risk is distributed across the field of practice as a way for encouraging the players to recognise possible dangers other than the ball, such as players off the ball and the seven and eleven-a-side goals. By doing so, the players’ bodies are learning to become more attuned to the seduction of things in practices for knowing when to move out or hold position, and when to pass or keep possession of the ball.

(3) In some practices the ball is an object of force where players might not be seduced, yet still fail to be the quasi-subject. In comparison with players moving the ball at their feet, when the ball is in the air coming towards the eighteen-yard box in a crossing and finishing practice, the players are circumspect in making a connection with the ball using their body.

Greater support/education on intervening with alliances

When coaches ‘notice’ (Jones et al. 2013) or ‘see’ (Corsby and Jones 2020) problems in practices, how they intervene and then manufacture passages becomes of crucial importance. But what coaches see, or notice can be expanded to account for the materialities of their practices. Coaches notice or see an opportune moment to intervene most often with the onset of an interruption. Research on expertise suggests that ‘expert’ coaches are more adept at ‘know[ing] what to say and when to say it’ (Schempp and McCullick 2010). However, rather than focusing on coaches I argue that the importance of an intervention is how they speak on behalf of human and nonhumans. Actors become ‘alliances’ (Harman 2009) for helping coaches to fabricate well by letting actors speak through their own material agency. Volunteer coaches might be at risk of being more disruptive and need greater support/education on intervening with alliances. Clarity is needed surrounding the fine line between when coaches’ interventions are productive and how to prevent them from being merely disruptive. As there are countless interruptions in any given practice, coaches need to be able to justify the intervention, so that they don’t become the interrupter themselves! The coaches under observation are prone to being disruptive when they commentate on players’ passages. The commentary involved speaking over the movement of the players in relation to the ball and their positions in passages. Another potential indicator of being disruptive is the frequency of coaches’ interventions. I noted differences between the frequency of interventions by the head coaches compared with some of their assistants, of which the latter appeared to intervene more often. Additionally, the body language of players is another indication of whether an intervention is disruptive or not in the way that players sometimes sighed in exasperation when coaches intervened after an interruption in a passage. But the extent of how disruptive these interventions are is not known. Professional judgement and decision-making (Abraham and Collins 2011) can be improved with greater support/education on intervening.

Chapter summary

In this chapter, I argued for coaches to become object-oriented so that they can translate the cartography of coaching into the territory of their own practices. Arguably, coaching now has a more “truthful” map to the territory of the coaches’ practices in this thesis. Object-oriented coaching recognises the ambiguity in the term ‘coaching’ and offers a way for coaches to stay at the local sites of practice. There are three implications: first, coaches become cartographers in assembling, disassembling, and reassembling of the Field of Play; second, coaches can be inducted to the seduction of things; and third, greater support/education on intervening with alliances.

Chapter eight | An ontological manifesto for the sociomateriality of sport

In this chapter I conclude the thesis with an ontological manifesto for the sociomateriality of sport. First, I state the significant contribution of coaching as a relationist field of practice. Second, I argue that the sociomateriality of sport can pave a ‘big picture’ outlook to bring together the three disparate areas of coaching research reviewed in Chapter two. Third, I identify some strengths and limitations of how my study contributes to the overall theorisation of ANT and sociomaterial theory, but at the same time focuses so tightly on Latour’s work and ANT itself. Fourth, I outline recommendations for future research.

Significant contribution of thesis

The significant contribution to knowledge of this thesis is for coaching to be conceptualised as a relationist field of practice which rests upon five propositions: (1) nonhuman actors are matters of concern; (2) coaching is ontologically different from The Game; (3) materials give shape to, and materiality shapes, practices; (4) coaches intervene with alliances; and (5) a ‘new’ sociomaterial competence is necessitated.

First, nonhumans are a ‘matter of concern’ (Latour 2004a). If matter did not *matter*, then practices would not be possible. The ontological dimension of what things *do* would remain hidden and left unarticulated in coaching research. However, in the cartography of coaching in Chapter five materials were the starting point for developing coaching as its own field of practice. But to do so, nonhumans had to be granted the same status of an ‘actor’ (Latour 2005a) with humans, such as coaches and players. This is crucial for being able to trace how both social and material relations become entangled in coaching practices.

Second, coaching is seen as being ontologically different from The Game. This was demonstrated by my ‘disconcertment’ (Verran 1998) from coaching sharing the same Field of Play with The Game. In comparison with The Game, which has its own laws and actors, coaching has no laws but does have actors that are specific to its own field of practice. The nostalgia of the *beautiful Game* acts as a barrier for developing a lexicon of coaching and procedures for practice.

Third, materials give shape to practices when they are delegated with authority by coaches on the Field of Play. Matter matters as cones, balls, bibs, goals and conditions and progressions give shape to network setups or practice arrangements. This also forms part of the first implication where coaches are the cartographers in assembling, disassembling, and reassembling the Field of Play. Matter matters for players as they perform within these arrangements by attuning to, and (re)orienting themselves to materials. Matter matters for coaches as they can follow the materiality when social and material relations come together in passages. Materiality shapes the ‘quasi-object’ (Serres [1980] 2007) when the ball is in connection with the player. The ball is of ‘empirical relevance’ (Hindmarsh and Llewellyn 2016) when the coaches noticed players becoming ‘seduced’ (Serres [1985] 2019) or led astray by the material agency of the ball. Drawing inspiration from Serres ([1980] 2007), the ball not only transforms the player in connection with it (quasi-object) but also those who want to be the subject of the ball (quasi-subject). The coaches in this thesis also noticed players are seduced by the material agency of the seven and eleven-a-side goal, and the ‘bunching’ of players in the ‘middle’ of practices. Consequently, the second implication recommends for coaches to be inducted to the seduction of things in practices.

Fourth, coaches intervene with alliances of human and nonhumans. An intervention is usually precipitated by an interruption, which highlights a problem in the practice (i.e., one such problem is ‘to be, or not to be, seduced’). The purpose of intervening is to overcome a ‘hiatus’ (Latour 2013) with the goal of reorienting players so that they can move from a weak to a stronger position. Intervening mattered for qualifying the ontological difference between The Game (non-intervening) and coaching because if coaches did not intervene players might continue to be led astray. This suggests a clear purpose for practice and forms part of the third implication in better supporting/educating volunteer coaches on intervening with alliances.

Fifth, a relationist field of practice demands a ‘new’ sociomaterial competence for better attending to how coaches attune to nonhumans in practices. A sociomaterial competence emphasises both social and material relations to ensure that agency remains a ‘democratic’ (Harman 2009) process among all actors. After the onset of an interruption, there is an emphasis on coaches’ interventions being faithful to their fabricated constructions. Coaching well, however, is not solely the competence of coaches because they are required to literally *speak* on

behalf of the relations of the actor-network ‘relevant’ (Hindmarsh and Llewellyn 2016) to a practice. Indeed, for what coaches *propose* (i.e., to recreate a passage, give an alternative or start the passage anew), it is imperative that their *articulation* of the problem is faithful to the construction of the passage up to the point of the interruption for any fabrication to take place. This recognises that coaching is as much about its construction as it is about its subsequent fabrication (see Chapter five: part five in the cartography of coaching). However, practices can still collapse as fabrications are always an aberration of the truth. The five moving parts, then, are a ‘collective’ (Latour 2004b) accomplishment.

The sociomateriality of sport

This thesis has the potential to bring about a new lexicon from the ‘symmetrical vocabulary’ of ANT, as it finds a ‘common ontology’ for talking of both humans and nonhumans (Callon and Latour 1992). The five propositions are ‘analytically generalisable’ (Smith 2017) for bringing about a new research stream dedicated to investigating the *sociomateriality of sport*. It is hoped that this will go some way towards developing a ‘big picture’ outlook for coaching research. The big picture, however, is defined ‘*only of networks and of their relations*’ which means that:

If we want to see the ‘big picture’, we have to be in touch with some sort of an inscription device that, through many mediations, elaborates locally and *inside* a network, a projected picture ... the ‘big picture’ is not given in one frame of reference, but in going from one frame to all the others through a network. Operations like thinking, abstracting, building pictures, are not *above* other practical operations like setting up instruments, arraying devices, laying rods, but are *in between* them. (Latour 1988c,30-35, emphasis original)

The cartography in Chapter five acts as a ‘big picture’ for finding a common ontology for the three areas of coaching research reviewed in Chapter two. If there is agreement among coaching researchers that sport coaching is a sociomaterial practice, then manufacturing has a significant role for how we conceptualise its field of practice. Inspired by the relationist ontology of ANT, human and nonhuman actors become the new ‘chains of reference’ (Latour 2013) for developing coaching as its own field of practice. Chains of reference are what circulate in coaching practices and offer an alternative to the laws which act as an external referent for The Game. Other coaches

can now become more object-oriented by translating the map of coaching into the territory of their own practices.

Coach learning has been solely the achievement of coaches in their ability to transform their 'knowledge structure' (Werthner et al. 2015). Formal learning attempts to fix learning in advance with the inclusion of learning outcomes that can be used to attest the competency of coaches in coach education programmes. There is an assumption that learning is a linear process as a coach moves through the levels of qualifications (level one, two, three, four, five). Informal learning is more difficult to define because learning is 'serendipitous' (Abraham et al. 2009), as it can occur at any point and sometimes without recognition (Cushion et al. 2010). But what is consistent across formal and informal learning is that learning is viewed as a change in knowledge of coaches. In contrast, learning in this thesis is seen as to how well we as academics, pedagogues, coaches, and coach developers, attune to the sociomateriality of sport. Latour (2004b, 195-196) defines learning as 'pass[ing] through a trial to know a little more about it'. This is articulated in the five *moving parts* of the cartography of coaching in Chapter five. Learning becomes 'distributed' (Bennett 2010) across the actor-network including both human and nonhumans. Coaches can only move from one part to another (i.e., moving from The Game towards a field of practice, delegation, quasi-object, interruption, manufacturing) if the part is transformed by its associated move (actors, network setups, trials of strength, translation of trails, articulated propositions). *Actors* undergo *trials* in *network setups* where problems emerge (i.e., to be, or not to be, seduced) that are subsequently *translated* by coaches who *articulate* by *proposing* a different passage. In practice, this means that learning is much more than just about coaches, and its emphasis on practices should acknowledge its heterogenous actors.

It turns out that there was no divide found in this thesis between the cognitive processes and social interactions of coaching practices (North 2013, 2017). Coaching process research prioritises coaches' decision-making that is captured as discrete phases within models (Abraham and Collins 2011; Lyle and Cushion 2017). Indeed, Lyle (2018) recently argued for developing a conceptual framework of coaching based on 'accommodation, integration and coordination'. Abraham and Collins (2011) go some way towards developing a 'big picture' in the Professional Judgement and Decision-Making (PJDM) model, as it is inclusive of social, political, and pedagogical

dimensions of coaching. However, Latour (2005b, 137) argues that ‘as soon as a site is placed “into a framework”, everything becomes rational much too fast, and explanations begin to flow much too freely’. Therefore, the five moving parts of the cartography are situated in the local mundane sites of practice, and this is more consistent with coaching practice research (Jones et al. 2016).

Coaching practice research claims to adopt a ‘relational’ view of coaching (e.g., Jones and Ronglan 2018) but has arguably not gone far enough. Relationality was emphasised in this thesis in the way that any *object*, not just coaches or athletes, can be considered an actor. This has implications for moving beyond some of the divisive debates in coaching research where, for example decision-making is seen as a social practice as opposed to being only cognitive. While cognitive decision-making focuses on the outcome of decisions, where models act as a ‘best fit’ (Abraham et al. 2006), proponents of the social claim that cognitive processes are preceded by the social context in which interactions occur (Corsby and Jones 2020). In this thesis, decision-making becomes part of the larger actor-network and is seen as both cognitive and social. The material offers a middle ground between cognitive and social decision-making. This is made possible as the methodology of ANT allows for the reassembling of coaching from its practices. In this sense, decisions are always mediated in relation to an actor within a practice arrangement. A ‘best fit’ (Abraham et al. 2006) is *articulated* by coaches when they intervened followed by an interruption in which they *propose* by recreating a passage, giving an alternative, or starting the passage anew. However, this is crucially not solely a cognitive effort that takes place in the mind of coaches and nor is it only spoken between the ‘social interactions’ of coaches and athletes. Rather, coaches speak on behalf of actors who *speak* through their own material agency. When *practices* are seen as a *process* of materialisation there is no need to distinguish between cognitive and social processes as they are enacted within the same practice.

There are two implications of the sociomateriality of sport for coaching pedagogy research. First, coaching researchers should no longer confuse the language that belongs to The Game, as it conflicts with the proposition that coaching is its own field of practice. However, I recognise that this ontology of difference opposes the mantra ‘games-based coaching’ that is prominent in coaching pedagogy research, where there is less emphasis on training form activities and more on

playing form activities (Ford et al. 2010). But this is not to say that the practices inspired from ‘games-based approaches’ should be dismissed, rather I urge for greater precision in language use is warranted. Game Sense and the Constraints Led Approach are two such pedagogies that endorse the view of practices that are more realistic to games. While coaches might manufacture constraints that an athlete might face in The Game, they should exercise caution to ensure that the work of *translation* is done when making such an association. Notable differences are highlighted in the first part of the cartography of coaching when coaches move from The Game towards a field of practice, such as unwritten rules, cones, spaces, balls, players, bibs, conditions, and progressions. The use of ‘games’ confuses the ontologies between coaching, where coaches can intervene, and The Game, which is non-intervening. Additionally, without such differences coaching might be prevented from developing a language that is specific to its own field of practices. Arguably, this is what has led to the imprecise meaning of coaching (Cushion and Lyle 2016). In current definitions of coaching there has been an over prioritisation of coaches with the primary purpose on ‘athlete learning and performance development’ (Jones et al. 2016). In this definition athlete learning and performance development are the responsibility of coaches, and this is reflected in the methods and methodologies of coaching research that has tended to prioritise the ‘voice of coaches’ (North et al. 2020). Although the analysis in this thesis presents quotations that are attributed to the voice of coaches, this is considered appropriate for establishing how materials and their materiality gained meaning through the sayings of coaches and doings of players. Materials also exert agency of their own making as some become ‘lieutenants’ (Latour 1992) for holding the place of other actors.

Another implication is that object-oriented coaching helps to overcome the misleading dichotomy between coach and athlete-centred approaches to coaching. Given that more ‘disciplinary’ methods are considered coach-centred (Denison 2007) the emphasis on athlete-centred coaching seems logical. However, by moving from coach to athlete-centred (or vice versa) there is confusion surrounding the extent of the others’ agency. Perhaps the problem is with the notion ‘centre’ as this implies that coaching is centred around someone: either the coach or athlete. But this centring is inconsistent with the ‘generalised symmetry’ principle of ANT as all actors have a democratic right to agency (Callon 1986; Harman 2009). To say that coaching is coach or athlete centred is to betray the methodological humility of ANT. Law (2002, 101) captures this point

when he says, ‘there is no strategic location where there is accumulation: there is no centre or periphery’. Thus, I propose the phrase object-oriented rather than centred because this overcomes the problem of trying to specify a centre to only one actor; only those that become ‘relevant’ during a practice do (Hindmarsh and Llewellyn 2016). Actors might contribute to the functioning of the network as an *intermediary* or *mediator* (Latour 2005b). Object-oriented coaching offers an impartial starting point for moving towards the sociomateriality of sport.

What makes a good ANT account?

In response to this question, I do not attempt to essentialise ANT, but rather seek to point out what makes a good ANT account from my reading of Latour and other sociomaterial theorists. In none of Latour’s books will you find a step-by-step method that can be simply followed and put into practice. As I have pointed out in Chapter three, ANT’s adage is to ‘follow the actors themselves’ (Latour 2005a). Law (2004) aptly calls this an ‘after-method’ approach for describing ‘relational materialism’, which is consistent with Latour’s relationist ontology, where the focus is on the coming together of social and material relations in practices.

ANT does not conform to ‘conventional humanist methodology’ of qualitative inquiry because it is not human-centred and refuses its pre-existing method and methodologies (St Pierre 2018; 2021). This means that ANT can be considered ‘post qualitatively’, where there is no starting or end point and we ‘learn to live in the middle of things’ (St Pierre 1997, 177). St Pierre (2008) critiques qualitative inquiries in the way that they cannot shake off the logical positivism which it tried to rally against from traditional notions of the natural science, such as trustworthiness, credibility, and rigour. Consequently, St Pierre (2008) has argued for the deconstruction of qualitative inquiry where one refuses its fundamental categories. For example, in this thesis I do not use terms like methodology, method and research design for how they have been used in the conventional sense. Instead, I replaced research design with ‘ANT ethnography’, methodology with ‘Latourian ANT methodology’ and method with five Latourian ANT concepts. First, while ANT ethnography might give the impression that the research design is conventional from the use of the word ‘ethnography’, this is not used in the same sense of studying cultures (*ethno*), as it is interested in practice (*praxis*) (Buerger 2014). Although Mol (2002), another seminal ANT theorist, proposes ‘praxiography’ instead of ‘ethnography’, I maintain the use of the latter term

but add the prefix ‘ANT’ given that Latour (2010c) uses ‘ethnography’ in his writings. Additionally, de Vries (2016), who has written an anthology of Latour’s life’s work, uses the phrase ‘ANT ethnography’ as a par excellence of Latour’s empirical philosophy. Second, Latourian ANT methodology lays out the relationist ontology of Latour’s empirical philosophy where the social is kept flat. And third, the five Latourian ANT concepts guided the cartographic inquiry in the same way that St Pierre (2008) refers to as a ‘concept as method’ approach. This is exemplified from each part in the cartography of coaching which is guided by an Latourian ANT concept.

Strengths and limitations

A first strength of this thesis lies in the research design from its cooperative element in working with two ‘legacy’ (now ‘platinum’) clubs selected by the governing body of sport for football in Scotland. Both clubs achieved the highest level of endorsement by the Scottish Football Association prior to the start of fieldwork. This means that at an organisational level, the clubs meet the highest standard with regards to participation, education, club services and promoting an attractive game. The research is of relevance for how the SFA can promote ‘best practice’ for clubs who are at lower levels of award since the emphasis on volunteer coaches’ practices is an alternative framing of the award which is not a mandated part of the ‘Quality Mark scheme’ criterion.

A second strength of the research design is the ANT ethnography, for which I observed two volunteer coaches’ practices over an eight-month period. The analysis gives both theoretical and practical insight of the coaches’ practices through an audio-visual-textual medium, which they can draw upon as a source of feedback for the way that they practise. Over the fieldwork I also engaged in extra-curricular activities outside of my responsibility as a researcher, where I attended some of the team’s games at the weekend and fundraising events. I did this not because I wanted to gather further insights away from the field, but rather to develop a strong professional relationship with the coaches given the length of time of the fieldwork.

A third strength lies in the methodological lens of Latourian ANT for capturing the ontological dimension of what things *do* in coaching practices. ANT’s relationist ontology is suitable as it

grants agency to both human and nonhumans, the latter of which has been downplayed or completely ignored in coaching research. The *moving parts* of the cartography in Chapter five attempts to overcome this deficiency by reassembling coaching from its practices. The enigma “what *is* coaching?” that inspired this research was addressed in relation to the coaches in the opening anecdote at the start of this thesis, where they can be considered coaching in a limited sense, as facilitating the participation of sport moves through only the first three and not all five parts of the cartography. A fourth strength is that the sociomateriality of sport may have applications beyond football. The cartography of coaching can help coaching researchers better attune to how coaches move through the parts of coaching.

A first limitation is the exclusive focus on the delivery component of practices, as other aspects of the coaching process might have been underplayed, such as planning and the strategic coordination of the coaching process. I did not capture the planning that the coaches underwent prior to delivering their coaching sessions. Yet, Schempp and McCullick (2010) argue that planning is an essential component of the coaching process, especially for the professional coach. Future studies could examine how planning becomes materialised in the enactment of the delivery component of the coaching process. While there was a sense of routine to some of the practices that I observed over the course of fieldwork, I do recall on one occasion, quite far into the fieldwork, and Paul said to me before the start of the session something along the lines of, “I don’t have a clue what I’m going to do this evening”. This perhaps reflects the spontaneity of coaching as a creative process that should not be predetermined in advance (Jones and Corsby 2015) or is a call for more practitioners support due to the precarious nature of community sport work (Gale et al. 2019). Both points suggest a need for extending the actor-network beyond the delivery of coaching.

A second limitation is observation as a standalone method. While observation has been the ‘hallmark’ (MacLeod et al. 2019) of previous ANT studies to avoid privileging any individual actors, I recognise that other aspects of coaching might have been missed by using this method alone. Indeed, interviews or focus groups might have given more introspective and personal narratives of the issues surrounding volunteer coaches’ practices. Although such reflexive methods have been championed in much of coaching research and have given rich and detailed

accounts of practitioners ‘lived experiences’ (Cronin 2013), ANT is generally focused on questions that prioritise the ‘what’ and ‘how’ rather than on the ‘why’ (Fenwick and Edwards 2010). This is not to say that interview methods cannot be used in ANT, as some studies do draw upon such methods, but they need to be adapted in ways so that they avoid reflexive accounts of actors. I recognise that my unwavering methodological stance might have limited the dialogue I had with the clubs, coaches, players, and parents. Indeed, my notebook became an actor of interest to one of the coaches who said something along the lines of, “I always wondered what you were scribbling down in your notebook”. On another occasion he said, “I sometimes would come over to you and ask, “what do you think of that?” These quotes bring the notebook into sharp focus as Paul is understandably inquisitive about what I was scribbling down. In future work, I will consider how conventional qualitative methods can be used more creatively but in ways so that they are still methodologically compatible with ANT and sociomateriality.

Growing out of Latour

In the future I will endeavour to develop my own ‘Macleonian’ version of ANT. I will broaden my theoretical lens in new materialisms by drawing on the work of Barad (2005), Bennett (2010), Bradiotti (2013), Deleuze and Guattari ([1987] 2017), Haraway (2016), Puig de la Bellacasa (2017), and Stengers (2010). I will also read Harman’s (2018) object-oriented ontology and the post-structuralist work of Derrida ([1967] 2016) and Foucault ([1991] 2020).

My study contributes to the overall theorisation of ANT and sociomaterial theory from its application to sport coaching. To my knowledge, this is one of the first ANT studies in the field of sport coaching. I have developed a version of Latourian ANT that spans across the course of his career, albeit not all, and so there is scope to do further work on his more recent endeavours in writing about climate science. This study contributes to theorisations of ANT from the cartographic method that is applied to conceptualising coaching as its own field of practice. While the five moving parts of the cartography are specific to coaching, I believe it can offer others a method for studying practices more generally, and this is important because the articulation of ANT’s method has not been made clear in previous ANT studies (Adams and Thompson 2016). This study also contributes to conversations in sociomaterial theory which was highlighted in the

literature review in Chapter two, where I compared three disparate areas of coaching research to sociomaterial studies in education, organisational theory and science and technology studies.

But I also recognise that there are some limitations from focusing so tightly on Latour's work on ANT. Latour's voice might be too dominant in the text as I draw extensively from his work, and this might overshadow my own voice. But as ANT has not been applied to sport coaching, I found it necessary to use Latour's voice for how he has applied various concepts in different practices, such as science ('articulated propositions'), law ('trials') and politics ('translation'). I also recognise here that some ANT concepts were easier than others in making the link to coaching practice. For example, 'actor' and 'network' have been discussed more generally in the ANT literature (Latour 1999; Law 2008). Despite this, other niche concepts such as Callon's (1986) 'obligatory passage point' were more difficult to *translate* as his study is specific to scallops. This meant that I had to draw more heavily on others' work when borrowing such concepts to the conceptualising coaching as its own field of practice.

Another related issue is focusing so tightly on ANT's methodology for the study of sport coaching. This might have come at the expense of losing sight of other methodologies, paradigms, and perspectives outside of ANT, and those already established within the field of sport coaching. ANT studies tend to distance themselves from previous social science traditions (i.e., phenomenology, interpretivism and social constructivism), as they fail to consider the 'missing masses' (Latour 1992) for how 'matter comes to matter' (Barad 2003). Although I have been particularly attached to Latour's emphasis on nonhumans, I do try to show how other approaches can contribute to our conceptualisation of coaching. In this way, I attempt to develop associations with other coaching researchers by bringing materialism back into our conceptualisation of coaching. Moving forward, I will look to develop a big picture outlook for coaching research.

Finally, I recognise that I might have become too immersed in my readings of ANT where there is a danger that it becomes something that it is not meant to be – a theory of explanation. I treaded this fine line in the cartography from the way that it does not tell coaches what or how to coach, but rather is intended to be a navigational tool for helping coaches *move* through the *parts* of coaching. Thus, I recognise that ANT is not able to offer a point of finality, like a theory of

coaching, as it ‘stays with the trouble’ (Haraway 2016), so to speak. My reference to Haraway is indicative of how I am already considering how voices other than Latour can contribute to this conversation.

Recommendations for future research

The manifesto of this thesis lies in trying to open a new space in coaching research dedicated to the sociomateriality of sport. This emphasises a ‘big picture’ (Latour 1988c) outlook that can bring together the discrete areas of coaching research reviewed in Chapter two. Three recommendations are identified for future research.

Planning as an ‘enactment’

Research question: How does planning become enacted in coaching practices?

A first recommendation is to consider the ‘pre-assembling’ work that coaches do, and how this preparation shapes their field of practices (or not). Given that planning has been identified as a key component of the coaching process (Lyle and Cushion 2017), its materialisation over a session would appear to be of importance for better conceptualising the processes of when and how changes in planning occur in practices. Pre-assembling might become an additional part of the cartography or be inclusive of the first and second parts in the cartography of coaching, for when coaches move from The Game towards a field of practice and delegate authority to actors in network setups or practice arrangements.

Here planning is a process of materialisation that emerges, rather than as an already materialised state that happens before a practice takes place. The emphasis on materialisation overcomes the artificial divide between coaching process and practice research. The theoretical focus on sociomateriality helps to shift to what Mulcahy (2012) calls the ‘enactment’ of planning in practice. But to do so requires more creative research methods given that previous studies have tended to separate planning from practices. For example, Koh et al.’s (2018) study explored elite level coaches’ use of the internet through qualitative interviews. Although some important issues are brought to light where the coaches appear to draw on internet sources ‘uncritically’, the link to actual practice is absent or is at least only spoken about self reflexively by practitioners. However, as an enactment planning and practices are not seen as two separate entities but as ‘co-

constitutive' (Orlikowski 2007), shaping one another in ways that cannot be captured through conventional qualitative interviewing methods alone. This recommendation has the potential for helping coaches attend to sociomateriality in ways that they cannot plan for in advance but constantly negotiate in practice.

The 'intra-action' of sociomateriality across sports

How does sociomateriality 'intra-act' across different sports and contexts?

A second recommendation is to consider how sociomateriality 'intra-acts' (Barad 2005) across different sports and contexts, given that the focus in this thesis was on football. With an assumption that materials are essential to the practising of all sports, their materiality can be studied across individuals and teams.

Some recent work in coaching research has given insight into what coaches' 'notice' (Jones et al. 2013) and 'see' (Corsby and Jones 2020) in practices from their *inter*-actions with others, such as athletes, parents, and governing bodies of sport. However, this has largely been done without reference to materials and materiality. This was addressed in this thesis by giving insight into the ontological dimension of what things *do* in practices, as ANT's relationist ontology does not demarcate between humans and nonhumans as all are actors (Callon 1986; Harman 2009). There is also potential to further develop the cartography by drawing insights from new materialisms, which offers its own lexicon that might be of relevance for coaching research.

Creative methods for examining 'more-than-human' dimensions of sport

What creative methods can be used to access players' multisensory experiences and the affective forces that flow within the sociomateriality of sport?

A third recommendation is for creative methods that can capture players' multisensory experiences and the affective forces that flow within the sociomateriality of sport. In this thesis, I engaged with one creative method, 'mapping practices', from Latour's (1992) notion 'lieutenant', which refers to a human or nonhuman actor that holds the place for another. I was able to express the materiality of cones and bibs as a lieutenant for the white lines and players uniform (see Chapter five). Creative methods like these emphasise 'thinking with theory' (Lupton 2019c) because they require alternative ways for capturing nonhuman agencies so that their

materiality can be accounted for which is not possible using conventional qualitative approaches alone.

Players' multisensory experiences can help to make manifest the 'agential capacities' (Bennett 2010) that are generated from participating in the sociomateriality of sport. By developing creative methods which can give insight into some of these capacities, the affects that sport produces on players and coaches can be studied. Affective forces are the energies that impel response and action in human-nonhuman assemblages to create agential capacities that shape and motivate feelings, learning or action (Lupton 2019d). Insight into how objects and technologies in different sports become integrated within practices will allow for a more nuanced understanding for how they are shaping performances.

Creative methods signal a change from the more conventional qualitative approaches to what St Pierre (2011) has called 'post qualitative research'. Post qualitative approaches, which encompass posthumanism, new materialism, and ANT, are productive conceptual lenses that do not privilege the subjectivity of individuals in research (Braidotti 2019). Although Braidotti's (2019) research focuses on climate and planetary issues, there are important lessons to be adopted for how we can begin to think differently about sport coaching. There is already an emerging body of new materialist scholarship in disability sport (Montforte 2018) and arts-based methods, such as story completion and poetic inquiry (Lupton 2019a). Such creative methods might help to inform our understanding of the 'more-than-human' dimensions of sport.

Postscript | Reflections on coaching with Latour

What then is a sociologist? Someone who studies associations and dissociations, that is all, as the word 'social' itself implies. (Callon and Latour 1981, 300)

The aim of the postscript is to present my reflections on coaching with Latour. I first reflect on my endeavours with Latourian ANT and then discuss some critiques of ANT as a methodology. Second, I present an imaginative dialogue with the coaches from the anecdote at the start of this thesis.

ANT as a methodology

As I reflect on my endeavours with Latourian ANT, I give insight to my first encounter with ANT from which I never looked back. However, I then go on to suggest that the wondrousness of ANT can present its own challenges as there is no 'gold standard' and this can, as I often experienced, present its own difficulties on writing with ANT.

On coaching with Latour

I go back to my first point of contact with the methodology of Latourian ANT right up until the writing at this point in the thesis. I was first introduced to sociomateriality and ANT in 2015 when I was applying for an Economic and Social Research Council (ESRC) studentship at the University of Stirling. I was instantly drawn to the methodology of ANT from the moment Professor Tara Fenwick introduced her work on sociomateriality in education and its emphasis on nonhumans. Moreover, I had never come across any work related to sociomateriality or the role of nonhuman actors in coaching practices. I realised the potential of what a methodology like ANT could offer to practitioners and for opening a new arena in coaching research. However, at that time, I had very little knowledge of sociomateriality and ANT. After successfully securing funding for an ESRC studentship over four years, where the first year was a master's degree and the remaining three a Doctor of Philosophy in Education, I decided, with the approval of my supervisor, to undertake a pilot study on ANT of coach developers who run the entry level coach education programme for coaching children and youth in football. During the master's year I gently introduced myself to ANT in education and organisational studies (e.g., Fenwick and

Edwards 2010; Gherardi 2012), as well as some seminal ANT texts (e.g., Latour 2005a). At that time, I was also very grateful to have had the support of some fellow doctoral students, particularly Dr Bethan Mitchell and Dr Aileen Ireland, who organised some ANT reading groups, of which I found extremely beneficial for helping me get to grips with ANT. At the end of my master's programme, I realised quite early on that I needed to organise a reading work plan related to ANT that I would commit to throughout my doctoral studies. As my reading up to that point was primarily on Latour, I decided to devise a plan around his writings on ANT throughout his career. Having read his seminal text '*Reassembling the Social*' during my master's programme, I then decided to read, in this order: '*The Making of Law*', as I was particularly interested in how to set up an ANT ethnography at the time; '*The Pasteurization of France*'; '*Aramis or the Love of Technology*'; '*We have never been modern*'; '*Science in Action*'; '*Pandora's Hope*'; '*Laboratory Life*'; '*An inquiry into modes of existence*'; and '*The politics of nature. Bringing the sciences into democracy*'. Alongside these key texts, I also found the work of Harman (2009) an accessible entry point into Latour's philosophy from his book '*The prince of networks. Bruno Latour and metaphysics*'. Harman (2018) offers some thought provoking critiques of ANT in his own philosophical treatise '*Object-Oriented Ontology*'. I have also taken inspiration from the works of Serres ([1980] 2007; [1985] 2019) in '*The parasite*' and '*The five senses*'.

The reason for dwelling in Latour's work was to ensure that I had a good enough understanding of the concepts he proposes and how they might be of relevance to the study of sport coaching. It is only now that I have begun to realise that I have been *Coaching with Latour* all along, as if he were alongside me throughout fieldwork, helping me attune as I followed the actors. I acknowledge the influence of Latour in the title of my thesis. However, what has been more challenging is how to translate the work of sociomateriality and ANT in relation to coaching research. Initially, I undertook a review of coach learning and coaching process and practice in the first year of my studies. It was only later in the third year when I decided to also include a review of coaching pedagogy research. The decidedly broad literature review reflects my uncertainty in where to place sociomateriality in coaching research. As I have come to learn, you cannot pin down ANT in any place, as it is not stable like other social theories that are supported with structures or frameworks. However, as I have indicated in chapter eight, there is much potential for the methodology of ANT in coaching research for helping to forge new associations,

rather than continuing along divided lines of work. ANT's greatest strength, after all, lies in its alliances with other actors, and this means that there is more to gain by acknowledging the many ways to position sport coaching. In other words, there is more to gain as an alliance than there is from separation.

How to conduct an ANT study

If you are looking, as I did at the start of my studies, for a 'how to guide' on ANT then prepare to be disappointed. ANT is a 'method and not a theory' (Latour 1996a) and resists any attempt at being defined (Law 2007), as this would close rather than open up the actor-network. ANT takes a much more modest starting point that is by no means locked within a paradigm or a worldview. This was perhaps the most difficult realisation of coming to grips with ANT, as there was no map or even a compass for how to begin a cartography into sport coaching. I remember at one point in my studies when this realism suddenly hit me at the end of reading Gherardi's (2012) book on '*How to conduct a practice-based study*' which is closely aligned with ANT. The title of her book is deliberately ironic, and she even said so herself when I was fortunate enough to be at the launch of the second edition of her book at the Professional Practice and Professional Leadership Conference in Sydney (December 2019). In each chapter Gherardi (2012) describes a method, not a theory, for how different organisational practices are relationally accomplished. This influenced my own theorising in Chapter five and is why the starting point of the cartography was the Field of Play, as this was the place in which coaching transforms into its own field of practice. In Chapter six I highlighted the ontological differences between The Game and coaching. The displacement of the Field of Play led me to other actors, which became the new chains of reference for developing a relationist ontology of coaching as its own field of practice. ANT granted me the ability to translate the map (cartography) of coaching into the territory of some of the coaches' practices, so that other coaches can become more object-oriented.

Some of the Latourian ANT concepts introduced in Chapter three which are elaborated in the moving parts in the cartography in Chapter five could be considered as imperative for any ANT study. For example, the phrase 'actor-network' is essential to any ANT study and is perhaps what allows for such vastly different practices to be studied. Another concept that has been essential is the concept of 'translation' which, from my own understanding, accounts for the hyphen between

actor-network. In other words, the network is reducible to actors but at the same time actors are irreducible to the network. While the other two concepts, ‘trials of strength’ and ‘articulated propositions’, only became relevant to deal with the nuances of the cartography of coaching.

Some challenges and criticisms on writing with ANT

To borrow a metaphor from a different sport, I would perhaps describe my experience of writing as *wrestling* with how to do justice to an ANT study of sport coaching. My writing style has been a limitation that has personally impacted on the readability of my work, where I have not been able to express the ideas that I can more clearly express in dialogue. My primary supervisor spotted this ambiguity and has been incredibly supportive in giving me constructive feedback for managing the difficulties of writing. Any ambiguities that remain in this thesis are of my own making.

ANT has first been criticised for producing ‘sociologically prosaic’ accounts (Collins and Yearly 1992). This might not be surprising for someone who is unfamiliar with ANT given that the analysis is primarily descriptive. However, as argued by Latour (2005a, 129-137):

no scholar should find humiliating the task of sticking to description. This is, on the contrary, the highest and rarest achievement ... if a description remains in need of an explanation, it means that it is a bad description.

According to Latour, a ‘good ANT account’ is defined by its description of the actor-network. I have tried to remain faithful to the task of description by ‘following the actors’ as they made up their own account of coaching, elucidated in the cartography of coaching in Chapter five. Consequently, the moving parts of the cartography intend to be consistent with the method of coaching from the practices of the coaches in this thesis. However, this is not to say that their practices will be like other coaches’ practices because every coach is different. Although there were only two coaches, I do not necessarily view this as a limitation, as generalisability was not viewed in terms of quantitative statistical probability (Smith 2017). Rather, other coaches are encouraged to put the cartography into their own coaching practices so that they can become more object-oriented. This is consistent with Lyle’s (2018) call for the need to ‘operationalise’

processes of coaching due to the implausible task of an 'ideal' model of coaching (see Chapter two, coaching process). No such ideal model could ever exist. The cartography of coaching intends to help coaches translate the moving parts into the territory of their own practices. Whilst I recognise that the cartography of coaching does not tell coaches what or how to coach, it can potentially help coaching researchers to attend, and coaches attune, to the sociomateriality of sport. Now that coaching has been reassembled, so that the social and material are assembled back together again, coaches can stand on firmer ground for the decisions they make in practices.

A second criticism is 'Latour-style' ANT 'baffling talk' of 'obscure terminological twists' (Bloor 1999, 98). Bloor (1999, 95) claims that the 'Latourian alternative' to Science Studies is a 'step backwards' and offers nothing new because its 'recommendations [are] unconvincing and his thinking is judged to be confused'. However, Bloor's (1999) 'Anti-Latour' has been refuted by Latour (1999d) who argued that the 'obscurity' is the 'main claim to analytical clarity' that helps to maintain the distinction between the two schools of thought. In fact, he even goes on to say that the new way of speaking in ANT is so different to the others because their very argument is to maintain conventionality and limit new risk taking. I too expect to receive similar criticisms from coaching researchers who might be quick to dismiss and close rather than open up this new line of inquiry.

I also want to recognise that the key progenitors of ANT appear to have moved beyond ANT itself. Indeed, Latour has now expanded his inquiry into what he calls, '*An Inquiry into Modes of Existence*' (AIME), where ANT is now only but one amongst another fifteen 'modes' (Tummons 2020a). There is much potential to pursue further ANT inspired inquiries into sport coaching, but much work is still needed to make such an ambitious claim that coaching is its own 'Mode of Existence', like those already 'instituted', such as law [LAW], politics [POL], religion [REL] (Latour 2013).

A memorable moment

Although there were many, a particularly memorable moment in my studies was while I was in Sydney on an ESRC overseas institutional research visit. At that point I was transitioning into the third year of my studies. A colleague I had met during my visit at the University of New South

Wales put me in touch with another sport scholar at the university whose background was in political science and Aboriginal community sport coaching. After he spoke about his own research, I shared some insights from my thesis up to that point. As I talked through each of the moving parts of coaching (moving from The Game towards a field of practice, delegation, quasi-object, interruption, manufacturing) I will never forget his reaction. From the expression of his face and his body I noticed that he was genuinely shocked, as he infrequently lent backwards in his seat when I talked through the cartography of coaching. He said that he had never thought about coaching and the importance of materials in that way, and he encouraged me to publish my work. Coincidentally, on my return to the UK as I began to read, ‘*An Inquiry into Modes of Existence*’, Latour (2013, 65, emphasis added) argues that at the end of the inquiry one of the outcomes should be to shock:

The second requires an already more complicated negotiation, something called the restitution at the end of investigations: have we succeeded in making ourselves understood by those whom we may have *shocked*, without giving up our formulations?

I was very reassured upon reading this quote and it gave me the confidence to return from the overseas visit with greater determination going into the write up of the thesis. I have now come to see that the originality of an ANT methodology lies not in promising above and beyond that of the actor-network but instead what lies within it. The claim to originality is not that the coaches were doing something necessarily *new*, but rather was in the way the methodology of ANT enabled me to develop a map of coaching that is more “truthful” to the territory of its practice.

An imagined conversation with the coaches at the start of the thesis

Now we have reached the end of the thesis, I am prepared to respond to the coaches in the opening anecdote in Chapter one. I reimagine the situation from my endeavours on *Coaching with Latour*. The conversation starts at the end of the week’s camp.

Jordan: That was another busy week of camp.
Coach: Yes, I’m quite glad it’s over. I’ve had enough games for one week!
J: I noticed you like to play games. But how do you manage to do

- any coaching?
- C: Well, games are fun, and the players seem to enjoy it. And of course I do coaching - I simply coach the beautiful game.
- J: Yes, football is a beautiful game, but coaching is far from beautiful.
- C: Come again?
- J: Sorry I wasn't trying to say anything cute. Just that coaching and The Game are not the same. To say they are is confusing as you cannot coach in The Game.
- C: This is confusing! Are you saying that I do not do any coaching in my 'small-sided' or 'conditioned games?'
- J: Not necessarily. I agree that this is terribly confusing, but to say you are coaching *in* The Game is to confuse coaching and The Game. They really are very different.
- C: I have to say that I'm lost here. I have been taught on how to coach in The Game in coach education programmes. Surely you cannot disagree with the governing body of sport?
- J: No, I do not disagree with you, as I too have been on courses and have found that they have encouraged me to do the same – coach in The Game. But have you ever seen a coach, coach in The Game?
- C: You're playing with words. By 'game' I mean a tool, an instrument that can be applied for the purpose of coaching.
- J: But you see, The Game is not an instrument of coaching and neither is coaching an instrument of The Game.
- C: Maybe, I mean – but so what?
- J: Well, we need to change the way we think about coaching or others will think that they are coaching when they are just facilitating the participation of games.
- C: So are you telling me that I should stop playing small-sided and conditioned games?
- J: No, that's not at all what I am saying. But to call them 'games' is

misleading. I would say that because they are ‘small-sided’ and ‘conditioned’ does not mean you can still say they are a ‘game’. We do not say that an eleven-a-side game is ‘small-sided’ or ‘conditioned’.

- C: But the eleven-a-side game does have rules, so they are surely conditioned?
- J: Ah, but you see that’s exactly the problem! The Game has rules and anyone wishing to play can do so if they follow the Laws of the Game. But coaching does not have any such laws.
- C: Well, I have rules for when I am coaching, don’t you?
- J: Of course, but the rules you or I use in coaching are not the same as those in the Laws of the Game. The Game and coaching are really very different, and the rules are just one difference. For instance, take coaches as an example, if we stepped on the eleven-a-side-pitch during The Game we would be trespassing!
- C: This is very distressing. Are you now telling me that I shouldn’t step on the eleven-a-side pitch when I coach?
- J: Oh no, not at all. The great thing about coaching is that you can stand on and modify the eleven-a-side pitch. Think of this past week’s camp. We had 80 young people on the eleven-a-side pitch all at once! That wouldn’t be possible if it were The Game. Not only that but there were cones, balls, bags of bibs, seven and eleven a-side goals and no referees in sight.
- C: So, you are saying we need an equivalent Laws of Coaching?
- J: I did not say that. I simply wish to point out that in every single *move* we make as a coach on the eleven-a-side pitch, the more differences there are between The Game and coaching.
- C: But what does any of this have to do with my coaching and how does it make me a better coach?
- J: Quite a lot but you really are getting quite far ahead of

yourself. Who said it is about making *you* better? You do not get better on your own. Don't you also use cones, balls, goals, bibs, and players? (Move one: 'actors')

C: I do, but I have control over them as I am the coach, after all!

J: See? This is where I disagree with training that uses the word 'coach'. Coach education, coach development, coaching. Everything seems to imply that the coach is in control. But this is far from the truth. The same can be said with The Game, it's not all just about players.

C: But surely you would agree that a cone, ball, or bib cannot take its place on the eleven-a-side pitch all by themselves?

J: You coaches! You always baffle me. As you (move two: 'delegate') mark the eleven-a-side pitch with cones and gather balls in or give bibs to players, you are giving existence to coaching as its own field of practice. They make practices possible just as much as players do. Just as players take their position, so too do cones, balls and bibs. And at the same time, you give up some of your control.

C: So, are you saying that the more I add the less control I have?

J: I'd say that as you add more and more cones onto the eleven-a-side pitch, the more control you might think you have. This is at least true if you compare coaching with The Game where you have very little control as a coach. But the same is true when coaching - cones, balls and bibs have agency.

C: Meaning?

J: Meaning that you and players do not act alone. How do you plan to keep the players from not moving outside of your practice arrangement? Just as the white lines on the eleven-a-side pitch keep the players within the Field of Play, cones take their place (as a 'lieutenant') when coaching. The same can be said of bibs. Otherwise, how else would you be able to know who's who, as you only coach one team of players. The players and ball are the only two that move between The Game and coaching, and they are, so to speak, harder to control.

- C: So, are you saying I need to develop ways to keep the player and the ball under more control?
- J: Well, you could say that cones are better at holding their position than players or the ball in the way that they tend to stay in a fixed position for a certain period. I've noticed that players, and young players especially, tend to crowd around the ball (move three: trials of strength). The ball is like a magnet and the more the players want to be on the ball, the harder it is to keep the play under control. There are very little coaches can do in The Game if players constantly find themselves running towards the ball. And that is why intervening is important for making players aware of these detours away from their positions.
- C: So, what should I do?
- J: Coach!
- C: Oh, that's great. So, I ...
- J: Intervene. That is what differentiates coaching from The Game and gives you as a coach the authority to intervene. If you don't intervene you are as well to facilitate the participation of games.
- C: So, all I must do is just tell the players what to do?
- J: It's not that easy. Some suggest under no circumstances should you merely tell players what to do, but rather you must let them find their own solutions in practice. They would disagree that the coach should correct and give the players solutions for when mistakes occur in practices. Although instruction is not completely diminished, the coach becomes less of a coach in this view! Players don't learn to become oriented by the coach or by themselves. Rather, learning is always oriented by objects in practices.
- C: So, I just let the objects do their job!
- J: Not entirely. The purpose of coaching is to help players become more object-oriented. As I said earlier, there are no cones to guide the players' passages in The Game, they must find their own way. Perhaps it would be more appropriate to say that the coach is more 'hands off' in The

Game. Practices are, first and foremost, object-oriented, but that does not necessarily mean that players will also naturally become oriented to objects. This is an overlooked assumption of objects. Objects don't orient to players but rather players must orient themselves to objects (i.e., proposition two: materiality shapes practices). In other words, the ball does not come to the player, the player must orient themselves to the ball. But this can be difficult, especially for young players, as they tend to only focus on wanting to be the subject of the ball (part three: quasi-subject).

C: So how then do I help players to become more object-oriented?

J: Now, that's a good question! Answer: reorient the players to the objects. As a coach you can do this by recreating a passage, giving an alternative, or starting the passage anew (part four: interruptions). It's not a question of whether this process should be coach-centred or player-centred, but rather it is always object-oriented. Yes, coaches initiate the process of reorienting players, but they do not do so alone. Therefore, coaches must always speak on behalf of the objects in their practices and not just by themselves. Objects are more *objectful* than coaches. If coaches only speak on their own then, yes, I agree that they are very much coach centred! This would be the same as if players ignored coaches and continued playing because they thought coaching was The Game (i.e., remember there are no coaches in the Laws of the Game).

C: But coaching is not The Game ...

J: Exactly! Of course, coaching is not The Game, it is manufactured by how coaches articulate (part five: manufacturing) the many differences between what the actors *do* (construction), and what they could *do* (fabrication). As there is no coach in The Game, the players must reorient to the objects by themselves. Therefore, what coaches *propose* when they intervene must always be in relation to objects so that they coach well.

C: Well, it's a good thing that I already coach well!

Glossary

ACTANT/ACTOR: Actant is the semiotic term for actor, which gives agency to human and nonhumans (Latour 2005a), that was used in Science and Technology studies in the 1980s. Callon (1986) captures the agency of all actors in his expression 'symmetry' and Harman's (2009) use of the word 'democracy' recognises the equal right to agency of all actors irrespective of size, or complexity, natural or artificial, human or nonhuman.

ARTICULATED PROPOSITIONS: Articulated propositions grant others the ability to speak on behalf of an assembled actor-network. Articulation is speaking in the name of another where the enunciator becomes a 'spokesperson' on behalf of the actors (Latour 2004b). An articulation can be well or badly constructed. Latour (2003, 157, emphasis original) argues that this is a political form of talking which answers the question: '*In the name of whom, of which other agents are we talking?*' To articulate is not to say, 'A is A', because this repeats the same expression twice, but rather it is to say, 'A is B, is C, is D' (Latour 2004c, 215). Latour (2013, 57, emphasis original) distinguishes between 'pre-positions' in the literal grammatical sense for marking a *position-taking*, and 'pro-positions' which denotes a position that is come to once the relations have been traced. Serres and Latour (1995, 106, emphasis original) propose a 'philosophy of propositions' which consists of two elements: first, 'pre-position' denotes the tracing of relations between actors; and second, 'pro-position' produces a map or general theory of relations.

CHAINS OF REFERENCE: Inspired by the relationist ontology of ANT, human and nonhuman actors become the new 'chains of reference' (Latour 2013) for developing coaching as its own field of practice. Chains of reference are what circulate in coaching practices and offer an alternative to the laws which act as an external referent for The Game. Instead of the Field of Play there is a field of practice; instead of the Laws of the Game there are unwritten rules; instead of play there are passages; instead of games there are practices; instead of context there are actors.

DELEGATION: In Latourian ANT, delegation is the fourth meaning of mediation for negotiating the differences between signs and things (Latour 1999a, 185-190). Latour (1999a) denotes the difference between signs and things through the semiotic term ‘shifting’, which can be spatial, temporal and actorial. In the cartography of coaching, delegation refers to how the coaches delegate authority in the form of action to nonhumans on the Field of Play. The shift is actorial in the way that coaches place down cones, gather balls, distribute bibs, mobilise goals and enrol players. The shift is also spatial as there is a displacement in the Field of Play. Finally, the shift is also temporal, as, unlike the laws of the game, there are no laws that underpin the coaches’ practices.

DISPLACEMENT: The first meaning of mediation is interference or an interruption in which a ‘displacement’ (Bloomfield and Vurdubakis 1999, 627) occurs in the normal or anticipated ‘program of action’ between two or more actors.

FIELD OF PLAY/FIELD OF PRACTICE: On the one hand, the Field of Play is the first law in the Laws of the Game that is representative of the eleven-a-side pitch in the way that it consists of side-lines, goal-lines, centre point, penalty sports, six-yard and eighteen-yard boxes. On the other hand, a field of practice is the first moving part of the cartography of coaching which recognises that coaching is ontologically different from The Game and thus needs to be seen as its own field of practice from the actors that allow its practices to hang together.

LIEUTENANT: Lieutenant is taken from the French ‘lieu’ plus ‘tenant’ which means holding the place of, or for, someone else (Latour 1992: 162). A lieutenant can be figurative or nonfigurative, human or nonhuman, competent or incompetent.

MEDIATION: Latour (1999a, 176-193) identifies four meanings of mediation, the first of which is of relevance for elucidating the role of mediators. An intermediary refers to ‘what passes between actors in the course of relatively stable transactions’ (Law and Callon 1992, 25). In other words, ‘defining [an actor’s] inputs are enough to define its outputs’ (Latour 2005a, 39). But when something goes wrong or action becomes disturbed, we suddenly attune to the materiality of nonhuman actors. It is at this point especially when we come to see action can be

overtaken by nonhumans (de Vries 2016, 94). Latour (2005a, 39) uses the term mediator for when an actor-network becomes displaced, where an actor or series of actors transform, distort, translate, and modify the meaning or elements they are supposed to carry.

MODES OF EXISTENCE: Latour has now expanded his inquiry into what he calls, ‘An Inquiry into Modes of Existence’ (AIME), where ANT is now only but one amongst another fifteen ‘modes’ (Tummons 2020a). Much work is still needed to claim that coaching is its own ‘Mode of Existence’, like those already ‘instituted’, such as law [LAW], politics [POL], religion [REL] (Latour 2013).

NETWORK: Network is an expression in ANT to check how ‘much energy, movement, and specificity an account is able to capture through description’ (Latour 2005: 131). The word network derives from the French term ‘réseau’ which relates to the many lines that converge in the form of a net (Latour 1996: 370). There are two types of networks that can be distinguished in ANT: the first is the network setup and the second is what passes through the network once it has been set up (Latour 2013: 32).

OBLIGATORY PASSAGE POINT: In Callon’s (1986) seminal study on the depletion of scallops the obligatory passage point was the first of four moments of translation known as ‘problematization’ that brought the fishermen, scientific colleagues and scallops into an alliance in order to ‘induce’ the scallops to multiply

POST QUALITATIVE: Post qualitative approaches, which encompass posthumanism, new materialism, and ANT, are productive conceptual lenses that do not privilege the subjectivity of individuals in research.

PRACTICE/PRACTICES: A practice becomes intelligible not only from what the coaches define as a practice, but also from a thick description of how a practice is composed (Latour 2010c). Practices are defined more inclusively as ‘a number of “repetitions” of the same practice’ (Gherardi 2012, 161).

QUASI-OBJECT/QUASI-SUBJECT: According to Serres (2007, 224-234) the quasi-object is when speaking of the player who is transformed when in connection with the ball (quasi-object), whereas players who become seduced by the quasi-object do so in an attempt to be the subject of the ball (quasi-subject).

SEDUCE: Drawing inspiration from Serres (2007: 264), to be seduced is used in the same sense of Ulysses who is 'led outside the normal orbit, the straight, normal or ordered path' by Circe and others. Here I refer to the Latin etymological roots of the term seducere, composed of the verb ducere, 'to lead', and preposition se, 'aside, away' (Gherardi and Perrotta 2014).

SOCIOMATERIAL: The term sociomaterial signifies the 'co-constitutive entanglement' of the social and material in everyday life (Orlikowski 2007). According to Orlikowski and Scott (2008) 'agencies are so thoroughly saturated to each other that previously taken-for-granted boundaries are dissolved'. Sørensen (2009) captures the importance of sociomateriality or, as she puts it, the 'hybridity' between social and material relations.

TRANSLATION: Translation in French recognises the double meaning of making connections and betrayal or treason. Translation was introduced in ANT most prominently through the works of Callon (1981) for understanding how the relations among heterogeneous entities work towards a common goal, such as a new theory or the discovery of an object. Translation is defined by Callon (1981, 211) as 'creating convergence and homologies by relating things that were previously different'. The metaphor of translation was influenced by the early works of Michel Serres. According to Brown (2002, 5), translation for Serres was defined as the 'process of making connections, of forging a passage between two domains, or simply as establishing communication'. Serres and Latour (1995, 70) reformulated the epistemology of science and its relation to culture of the human sciences as the 'Northwest Passage' ... [which] resembles a jagged shore, sprinkled with ice, and variable'. Latour (1996b, 118-119) distinguished between the diffusion model and the translation model for studying the uptake of innovations.

TRIAL OF STRENGTH: Trials of strength describe the circulation between actor and network, where the job of the inquirer is to detail these trials. Actors are defined by trials of strength that are staged by an actor or series of actors who tests the 'strength' of network connections through devising experiments (Latour 1999a, 311). During a trial, an actor might become a mediator or at other times they might fade into the background and remain an intermediary (Latour 1999c). This is not to say that an actor will remain a mediator or an intermediary because at any time the associations that hold the network together can weaken resulting in an intermediary becoming a mediator, or vice versa.

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Appendices

Informed Consent form: volunteer coaches

Please tick the appropriate boxes.

Yes

No

Taking part in the study

I have read and understood the study information dated DD/MM/YYYY, or it has been read to me. I have been able to ask questions about the study and they have been answered to my satisfaction.

I consent voluntarily to be a participant in this study and understand that I can withdraw from the study at any time, without having to give a reason.

I understand that when data analysis has started/results of the PhD are published it may not be possible to remove my data from the study.

Use of the information in the study

The University of Stirling is registered with the Information Commissioner's Office who implements the General Data Protection Regulations. All personal data on participants will be processed in accordance with the provision of the GDPR 2018.

I understand that video and audio recordings of coaching practices will be reported in the PhD thesis, teaching, seminars, conferences, and publications.

I understand that all personal information (names, ages, contact details, coaching qualifications, years of experience) will be anonymised and kept confidential.

I understand that PhD thesis will be deposited in the University of Stirling's Online Research Repository (STORRE).

Signatures

Name of Participant

Signature

Date

Name of researcher

Signature

Date

Your Rights

If you would prefer for your face to be blurred in visual outputs, please contact Jordan below.

Study contact details for further information

Mr. Jordan Maclean, University of Stirling, Stirling, FK94LA, T: 07472369296,

E: jordan.maclean1@stir.ac.uk

Informed Consent form: participating children's parents

Please tick the appropriate boxes.

Yes

No

Taking part in the study

I have read and understood the study information dated DD/MM/YYYY, or it has been read to me. I have been able to ask questions about the study and they have been answered to my satisfaction.

I consent voluntarily for my child to be a participant in this study and understand that I can withdraw from the study at any time, without having to give a reason.

I understand that when data analysis has started/results of the PhD are published it may not be possible to remove my child's data from the study.

Use of the information in the study

The University of Stirling is registered with the Information Commissioner's Office who implements the General Data Protection Regulations. All personal data on participants will be processed in accordance with the provision of the GDPR 2018.

I understand that visual data will be reported in the PhD thesis, teaching, seminars, conferences, and publications.

I understand that anonymity all participating children will be anonymised using face blurring visual software for all visual outputs.

I understand that PhD thesis will be deposited in the University of Stirling's Online Research Repository (STORRE).

Signatures

Name of Participant

Signature

Date

Name of researcher

Signature

Date

You're Rights

You are welcome to request further information about your child's participation from Jordan below.

Study contact details for further information

Mr. Jordan Maclean, University of Stirling, Stirling, FK94LA, T: 07462369296,

E: jordan.maclean1@stir.ac.uk

Participant information sheet: volunteer coaches

Name of department: Education, Faculty of Social Sciences, University of Stirling

Title of the study: A sociomaterial approach to reconceptualising the professional learning of community sport

Introduction

My name is Jordan Maclean, and I am a second-year doctoral research student conducting an interdisciplinary project between education and sport at the University of Stirling which is funded by the Economic and Social Research Council. I am conducting research that aims to examine the relationship between the learning and practicing of community coaching; football coaches working with children aged between 9 to 12 years in three Quality Mark clubs across Scotland. Community sport coaches occupy a central role in children’s participation and early experiences in sport; having a direct influence on Scottish and UK Government policies related to social, education, health, and communities. With this increased responsibility, the practices of community coaching are important to investigate; in better aligning the educational support for community coaches and we are keen on understanding the role that they play.

Why have I been invited to take part?

You have been invited to take part in this PhD project as you are in some way associated to the community sport. Your position may be a community football coach, parent, or primary caregiver of a participating child in a community football club programme.

Do you have to take part?

Participation in this research is voluntary. It is up to you to decide if you would like to participate in this research. You are under no obligation to take part in this research study, and you have the right to refuse or withdraw your participation from the study at any time, without reasoning.

What happens if I take part?

I will observe and record using a video camera three ‘legacy clubs’ endorsed through the Scottish Football Association’s Quality Mark Scheme, across Scotland over the duration of the season. Observations will take place during one coaching practice per week. Although the focus will be on the football coaches, participating children will be part of the observations. The visual data will be primarily used for reviewing sequences of the coaching practices that are of interest to understanding the relationship between learning and practice.

Are there any benefits in taking part?

The benefits of your participation in this research project are providing you with research evidence that will give you insights into your coaching practices that may help to further develop and enhance your future practice.

Are there any potential risks in taking part?

The only risks are due to the use of recording where you may be identified in images of clips used and personal information collected. I have met all ethical requirements of the University of Stirling and I will strictly comply with and put in place ethical safeguards concerning your participation.

How will data be collected?

At all stages of the research project, the data will remain anonymous and only accessible to me. However, due to the nature of visual methods of data collection, full anonymity cannot be guaranteed. I will put in place procedures to protect your personal information where your name will remain anonymous. In addition, you can request to have your face blurred in any of the visual data that is reused for teaching, seminars, conferences, and publications outputs (i.e., blurring images using visual software and omitting identifiable information in audio data). The visual data will be only used for the reporting of the PhD and may feature in academic teaching, seminars, conferences, and publication outputs. The final thesis will be deposited in the University of Stirling's Online Research Repository, an open access repository which will be archived for ten years. All visual data will be permanently deleted following the completion of the PhD project.

Your rights

You have the right to request to see a copy of the visual data that is reported and subsequently reused. You have the right to object to the video recording or visual data being used; however, please note that once the data is being analysed and/or results published it may not be possible to remove your data from the study. Therefore, it is asked that if you would like to withdraw your data, please do so within three months from the project commencing. Please contact me directly for further information related to your participation in the research.

What happens next?

If the conditions that have been listed above have been made clear and you are satisfied with information provided, you will be asked to sign the informed consent form. If this is not something you are interested in, thank you for your time. You are welcome to attend the final research project seminar.

Concerns about research project

Any concerns surrounding the research project can be sent to the primary supervisor of the PhD project at: cate.watson@stir.ac.uk.

Participant Information Sheet: community football clubs

Name of department: Education, Faculty of Social Sciences, University of Stirling

Title of the study: A socio-material approach to reconceptualising the professional learning of community sport

Introduction

My name is Jordan Maclean, and I am a second-year doctoral research student conducting an interdisciplinary project between education and sport at the University of Stirling which is funded by the Economic and Social Research Council. My research project aims to examine the relationship between the learning and practicing of community coaching; football coaches working with children aged between 9 to 12 years in three legacy clubs across Scotland. Community sport coaches occupy a central role in children’s participation and early experiences in sport; having a direct influence on Scottish and UK Government policies related to social, education, health, and communities. With this increased responsibility, the practices of community coaching are important to investigate; in better aligning the educational support for community coaches and we are keen on understanding the role that they play.

Why has your club been invited to take part?

Your club has been invited to take part in this PhD project as it has been nominated by the Scottish Football Association, ranked as a legacy club in Scotland and endorsed through the Quality Mark Scheme.

Does your club have to take part?

Participation in this research is voluntary. It is up to you to decide if you would like to participate in this research. You are under no obligation to take part in this research study, and you have the right to refuse or withdraw your participation from the study at any time, without reasoning.

What happens if your club takes part?

I will observe and record using a video camera of three legacy clubs endorsed through the Scottish Football Association’s Quality Mark Scheme, across Scotland over the duration of the season. Observations will take place during one coaching practice per week. Although the focus will be on the football coaches, participating children will be part of the observations. The visual data will be primarily used for reviewing sequences of the coaching practices that are of interest to understanding the relationship between learning and practice.

Are there any benefits to my club in taking part?

The benefits of your club’s participation will be in taking part in a UK-funded research project that will provide your club with research-based evidence giving you insights into coach learning and practice across three legacy clubs in Scotland.

Are there any potential risks in taking part?

The only risk is due to the use of recording where your club may be identified in images of clips used and personal information collected. I have met all ethical requirements of the University of Stirling and I will strictly comply with and put in place ethical safeguards concerning your club's participation.

How will data be collected?

At all stages of the research project, the data will remain anonymous and only accessible to me. However, due to the nature of visual methods of data collection, full anonymity cannot be guaranteed. I will put in place procedures to protect your club's personal information (i.e., blurring club logo in visual data).

The visual data will be only used for the reporting of the PhD and may feature in academic teaching, seminars, conferences, and publication outputs. The final thesis will be deposited in the University of Stirling's Online Research Repository, an open access repository which will be archived for ten years. All visual data will be permanently deleted following the completion of the PhD project.

Your rights

You have the right to request to see a copy of the visual data that is reported and subsequently reused. You have the right to object to the video recording or visual data being used; however, please note that once the data is being analysed and/or results published it may not be possible to remove your data from the study. Therefore, it is asked that if you would like to withdraw your club's data, please do so within three months from the project commencing. Please contact me directly for further information related to your club's participation in the research.

What happens next?

If the conditions that have been listed above have been made clear and you are satisfied with information provided, you will be asked to nominate a coach and team within the age range of eight to twelve years within your club. If this is not something you are interested in, thank you for your time. You are welcome to attend the final research project seminar.

Concerns about research project

Any concerns surrounding the research project can be sent to the primary supervisor of the PhD project at: cate.watson@stir.ac.uk.

Participant information sheet: parents/guardian

Name of department: Education, Faculty of Social Sciences, University of Stirling

Title of the study: A socio-material approach to reconceptualising the professional learning of community sport

Introduction

My name is Jordan Maclean, and I am a second-year doctoral research student conducting an interdisciplinary project between education and sport at the University of Stirling which is funded by the Economic and Social Research Council. I am conducting research that aims to examine the relationship between the learning and practicing of community coaching; football coaches working with children aged between 9 to 12 years in three Quality Mark across Scotland. Community sport coaches occupy a key and central role in children’s participation and early experiences in sport; having a direct influence on Scottish and UK Government policies related to social, education, health, and communities. With this increased responsibility, the practices of community coaching are important to investigate; in better aligning the educational support for community coaches and we are keen on understanding the role that they play.

Why has my child been invited to take part?

You have been invited to take part in this PhD project as you are in some way associated to the community sport. Your position may be a community football coach, parent, or primary caregiver of a participating child in a community football club programme.

Does your child have to take part?

Participation in this research is voluntary. It is up to you to decide if you would like your child to participate in this research. Your child is under no obligation to take part in this research study, and you have the right to refuse or withdraw your child’s participation from the study at any time, without reasoning.

What happens if my child takes part?

I will observe and record using a video camera three ‘legacy clubs’ endorsed through the Scottish Football Association’s Quality Mark Scheme across Scotland over the duration of the season. Observations will take place during one coaching practice per week. Although the focus will be on the football coaches, participating children will be part of the observations. The visual data will be primarily used for reviewing sequences of the coaching practices that are of interest to understanding the relationship between learning and practice.

Are there any benefits in taking part?

The benefits of your child’s participation in this research project is in being part of a UK funded research project that is fully supported by the Scottish Football Association and the Quality Mark legacy clubs involved.

Are there any potential risks in taking part?

The only risk is due to the use of recording your child who may be identified in images of clips used. However, I have met all ethical requirements of the University of Stirling and I will strictly comply with and put in place ethical safeguards concerning your child's participation.

What happens to the visual and audio data during and after the project?

At all stages of the research project, the data will remain anonymous and only accessible to me. However, due to the nature of visual methods of data collection, full anonymity cannot be guaranteed. I will put in place procedures to protect the identities of children's participation. For example, I will de-identify all children in all visual and audio data outputs (i.e. blurring images using visual software and omitting identifiable information in audio data).

The visual data will be only used for the reporting of the PhD and may feature in academic teaching, seminars, conferences, and publication outputs. The final thesis will be deposited in the University of Stirling's Online Research Repository, an open access repository which will be archived for ten years. All visual data will be permanently deleted following the completion of the PhD project.

Your rights

You have the right to request to see a copy of the visual data that is reported and subsequently reused. You have the right to object to the video recording or visual data being used; however, please note that once the data is being analysed and/or results published it may not be possible to remove your child's data from the study. Therefore, it is asked that if you would like to withdraw your data, please do so within three months from the project commencing. Please contact me directly for further information related to your child's participation in the research.

What happens next?

If the conditions that have been listed above have been made clear and you are satisfied with information provided, you will be asked to sign the informed consent form. If this is not something you are interested in, thank you for your time. You are welcome to attend the final research project seminar.

Concerns about research project

Any concerns surrounding the research project can be sent to the primary supervisor of the PhD project at: cate.watson@stir.ac.uk.