Local heroes

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Publication date:
2018

Document Version
Publisher's PDF, also known as Version of record

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BY
NIELS NYGAARD ROSSING

DISSERTATION SUBMITTED 2018

AALBORG UNIVERSITY
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Dissertation submitted March 2018

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Dissertation submitted: 07/03-2018

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ISSN (online): 2246-1302
ISBN (online): 978-87-7210-171-2

Published by:
Aalborg University Press
Langagervej 2
DK – 9220 Aalborg Ø
Phone: +45 99407140
aauf@forlag.aau.dk
forlag.aau.dk

Printed in Denmark by Rosendahls, 2018

CV

Niels Nygaard Rossing graduated in sport science from Copenhagen University in 2010. From 2010-2011 he worked with employee health in a Danish railroad company. Since 2011 he has been working as a Teaching associate professor at Aalborg University. Niels has been responsible of the development and coordination of several bachelor level courses in Sport psychology. The involvement in these course initiated a research study, *the language of football*, together with Lotte Skrubbeltrang. This research was published in Sport and Society in 2017.

Together with Dan Karbing, Niels received a grant in 2014 from both the Danish national football and handball federation to investigate the relative age effect in male and female youth handball and football. The results were published in two different reports in 2015.

Niels has also worked from 2010-2015 in the committee in DIFO, the Danish Sport and Exercise Forum. From 2013-2015 he functioned as the chairman in the committee. The work as chairman also led to the book *Talent development in sport*, which was published in 2015.

ENGLISH SUMMARY

Recent studies have shown that the narrative that the population size of athletes' place of early development play a vital role in their development trajectories, seem to be flawed. Further, since previous studies have investigated community size as a proxy for athletes' place of early development, other proxies may also represent athletes' place of early development in their development to elite.

The purpose of this Ph.D. project, comprised of three studies, to examine how players' place of early development influences their development to expertise in Danish handball and football.

Odds ratio analysis showed, in the first and second study, that elite youth and elite senior football players were more likely to have grown up in communities of high population density (>1.000 pop./km^2) and medium or larger population sizes (<30.000), whereas elite and elite youth handball players most likely had grown up in communities of medium population density (100 to <250 pop./km^2) and size (30.000<50.000). A geospatial analysis in the second study showed that elite youth handball and football players primarily had grown up near talent and elite clubs. In the third study, semi-structured interviews with coaches and talent managers presented specific possibilities and obstacles in football players' place of early development at three levels: community, club and team. Participating coaches and talent managers perceived small and remote clubs as obstacles for players' early development. At club level strong leadership, volunteers and good facilities were considered as important aspects that ensured continuing good teams in the local clubs. Further, the participants experienced a somewhat coincidental clustering of talented

youth players in clubs with unfavorable conditions at community and club level. The findings from the third study also indicated a linkage between conditions in players' early development environments and how coaches and talent managers perceive talented youth players.

The findings of this Ph.D. project suggest that players' players' place of early development is constituted by possibilities within community, club and team level. The findings across studies show that neither a specific community population size or community density seem to be optimal for player development in both Danish handball and football. As such, the findings indicate that the organization of sport is more influential in the Danish player development than the community. However, the clustering of talented players in seemingly coincidental local clubs suggests that team level conditions can outweigh club and community level obstacles. Results also indicate that the identification of talent by coaches and managers is linked to the conditions of the players' place of early development. For instance, players from smaller clubs and rural areas may appear raw as players, since the quality of their training in their local club teams is not as good as players from other clubs.

DANSK RESUME

Nyere studier har vist, at fortællingen om at befolkningens størrelse i udøveres hjemegn spiller en afgørende rolle for udøvere, virker til at være mangelfuld. Da tidligere studier primært har undersøgt størrelsen på udøveres hjemegn som en repræsentation af udøveres hjemegn, må der være andre repræsentationer, der kan være fordelagtige at undersøge udøveres hjemegne på.

Formålet med dette Ph.D. projekt, der består af tre studier, er at undersøge hvordan udøveres hjemegne har indflydelse på udviklingen af deres talent i Dansk håndbold og fodbold.

I første og andet studie viste odds ratio analyser, at det var mere sandsynligt at ungdomselite og senior elite fodboldspillere voksede op i befolkningstætte hjemegne (>1.000 pop./km^2) og middel til større hjemegne i befolkningsstørrelse (<30.000), mens det var mere sandsynligt hos elite og eliteungdomsspillere i håndbold at vokse op i hjemegne med en middel befolkningstæthed (100 to <250 pop./km^2) og befolkningsstørrelse (30.000<50.000). En spatial analyse i andet studie viste at elite-ungdomsspillere i både håndbold og fodbold primært voksede op i nærheden af talent og eliteklubber. Gennem interviews med trænere og fandt det tredje studie i tre niveauer af specifikke betingelser og barrierer i fodboldspilleres hjemegne: lokalsamfund, klub og hold. De deltagende trænere og talentchefer oplevede at mindre og fjerntliggende klubber var en barriere for spilleres udvikling. På klubniveau var stærkt lederskab, frivillige og gode faciliteter vigtige apekter, der sikrede konsistent gode hold i det lokale klubber. Derudover havde deltagerne erfaret en

tilfældig klynge af talentfulde spillere fra klubber med ufordelagtige vilkår i klub og lokalsamfund. Fundene fra tredje studie indikerede en sammenhæng mellem forudsætninger i spilleres hjemegne og hvordan trænere og talentchefer vurderede de talentfulde ungdomsspillere.

Fundene fra dette Ph.D. projekt indikerer at spilleres hjemegne udgøres af faktorer i lokalsamfund, klub og hold. Fundene på tværs af studierne viser, at hverken en bestemt type befolkningsstørrelse eller befolkningstæthed virker til at være optimal for udviklingen af spillere i både fodbold og håndbold. Fundene indikerer derfor at organisationen af sport har mere indflydelse på danske spileres udvikling end lokalsamfund. Imidlertid, peger klyngerne af talentfulde spillere fra umiddelbart tilfældige klubber på at forudsætninger på holdniveau kan overvinde barrierer fra klub og lokalsamfund. Fundene indikerer yderligere at træneres og talentchefers identifikationen af talent hænger sammen med betingelserne for spillernes hjemegne. For eksempel, vurderes spillere fra små klubber som mere rå, da kvaliteten af træning i deres lokale klubhold ikke er nær så god som spillere fra andre klubber.

ACKNOWLEDGEMENTS

I would like to say thank you to all my great colleagues at Aalborg University who have supported me in one way or the other. I am especially thankful to be in an inspiring office milieu with my colleagues Lotte Skrubbeltrang and Ludvig Rasmussen. A special thanks to Professor Jean Cote, Luc Martin and the colleagues at Queens University in Kingston whom I visited in the autumn 2016 with my family. Further, a warm thanks to Claus Hansen who have inspired me during the process in many ways. Also a thank you to DBU and DHF to help me in the collection of data.

Throughout the project, I have been blessed with skilled and dedicated supervisors on my journey. Dan and Diana have been of utmost importance for my development as a researcher. They have been able to give me the right support at the right time, which is not an easy job. Thank you for supporting me on my research path, but also showing me how to be a good researcher.

I would also like to thank my great family who have supported me throughout the project – and in my life. A special thanks goes to my parents who sparked my interest of sport in general and the passion for handball and football specifically. Even more than that, they also gave me a place of early development (and loving), which have created a vital foundation in the rest of my life. I hope I can be the same "local hero" to my children as you were to me.

Finally, a sincere thanks to my wife, Helene, and two kids, Maia and Sophus. You are a blessing of my life. You have all been patient with me at stressful times, flown across the world to follow me in my footsteps, and inspires me to be a better me.

FOREWORD

My interest in sport in general and football in particular has always been present. Maybe since I was born. But at least as far as my first memory go back. For me, one particular incident probably has been a so-called initial crystallizing moment (Walter & Gardner, 1986), since it sparked a genuine and conscious interest for sport and passion for football. It was in ’86 when I was six years old. The world cup was roaring in Danish media and in my head. Denmark was playing world-class football at that time. My current memory only recalls that I was told to go to sleep immediately after dinner, so I could get a proper rest before the national match was broadcasted by the Danish television – at that time the only channel. I was wakened up gently by my father in the middle of the night, tucked in a blanket, and trailed towards the only light inside and outside the house. The green light from the television displayed a fascinating world to me. A sport world with dreams, intensity, drama and sparkling narratives. A world that I ever since have been single-mindedly engaged in as athlete, coach, sport psychological consultant, researcher and most lately as a parent.

LIST OF PAPERS

This thesis comprises the three following papers:

I. Rossing, N. N., Nielsen, A. B., Elbe, A.-M., & Karbing, D. S. (2016). The role of community in the development of elite handball and football players in Denmark. *European Journal of Sport Science*, *16*(2), 237–245. https://doi.org/10.1080/17461391.2015.1009492

II. Rossing, N. N., Stentoft, D., Flattum, A., Côté, J., & Karbing, D. S. (2018). Influence of population size, density, and proximity to talent clubs on the likelihood of becoming elite youth athlete. *Scandinavian Journal of Medicine & Science in Sports*, *28* (3), 1304–1313. https://doi.org/10.1111/sms.13009

III. N. N. Rossing, D. Stentoft & D. S. Karbing. Requirements and barriers in the talent identification and development of youth football players. In review.

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LIST OF TERMS

Athletes – a term that refers to individuals who participate in any organized sport.

Players – refers to individuals who participate in organized team sports such handball and football.

Birth place effect – refers to the potential for an elite athlete's birthplace or place of early developmental environment to either promote or hinder the chances of an individual athlete being 'successful' in sport (Bruner, MacDonald, Pickett, & Côté, 2011).

Birth place – a term used in some studies to encompass where an athlete spent their athlete developmental years.

Place of early development – this term refers to the primary location in which a child has grown up in their childhood.

Municipality - refers to a geographical area under the responsibility of an incorporated local government council who among other things have the primary responsibility for the facilitation of schools and sport facilities.

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CHAPTER 1. INTRODUCTION

This thesis aims to investigate the role that handball and football players' place of early development has in their development of expertise. By exploring players' place of early development and the aspect of these places that influence players' development, this work aims to encourage reflections and dialogues among practitioners and researchers regarding players' place of early development, with the ultimate goal of prompting actions that may create better opportunities for player development across communities and clubs.

In the last few decades, sports worldwide have become an intensified power struggle among nations to win medals at international competitions, resulting in a "global sporting arms race" (Oakley & Green, 2001, p. 100). The hope for success in this race has led national sporting organizations (NSOs) and governments to increase funding to achieve or maintain elite performances at the highest level (Green & Houlihan, 2005).

Meanwhile, sports researchers have primarily aimed to determine what constitutes successful athlete development, such as optimal anthropometrics (Huijgen, Elferink-Gemser, Post, & Visscher, 2009), amount and type of training (Côté, Baker, Abernethy, 2007; Ericsson, Krampe, & Tesch-Römer, 1993), coaches (Bloom, 1985), peers (Duncan, 1993) and parents (Côté, 1999). Although it is generally accepted that both talent development (Abbott, Button, Pepping, & Collins, 2005; Henriksen, Stambulova, & Roessler, 2010) and talent identification require a multidimensional approach (Haugaasen & Jordet, 2012; Reilly, Williams, Nevill, & Franks, 2000),

talent development research has been criticized for reducing talents to various performance-based variables or practice-related variables, such as the quantity and type of practice. Studies with a specific focus on performance variables have certainly provided insight into the generally required sport-specific skills or compulsory anthropometry of athletes at the elite or elite youth level. However, as Denison suggested, "What may appear to be an athlete's personal problem [such as successfully reaching the elite level] might actually be related to some larger social construction of how we believe sport should function…". (2007, p. 380).

In fact, it seems that talent development research in general have had a primary focus on junior athletes that progress from the specializing to the investment years (Côté, Baker, & Abernethy, 2007) and the type and amount of training they undertake (Richardson , Relvas, & Littlewood, 2013). For instance, recent reviews of talent development research in football (Haugaasen & Jordet, 2012; Sarmento, Anguera, Pereira, & Araújo, 2018) have mostly focused on the renowned debate regarding athletes' type and amount of practice and their technical, tactical and physical development. Instead of examining these person-centered variables, we ought to take into account the dynamic relationships among them (Zibung & Conzelmann, 2017). Aligned with this notion, several researchers (Araújo et al., 2010; Fletcher & Wagstaff, 2009; Horton, 2012) have recently argued that the broader organizational contexts and dynamics of talent development are rather underappreciated and underexplored in talent development. Although the activities in which players engage *are* important, the larger social constructions in which players are embedded may also promote or hinder their development, as Denison (2007) suggests.

Based on these notions, some researchers have extended the analytical focus beyond the individual athlete to include large systems to investigate the influence of the organizational level on elite performance (Fletcher & Wagstaff, 2009) and the development of talent (Henriksen, Stambulova, & Roessler, 2010b). A Danish research group that includes Henriksen (2010a; 2011; 2014), Larsen and colleagues (2013) has conducted single case studies of Scandinavian sports clubs (track and field, kayaking, sailing and football) that over a long period successfully developed international-level elite athletes. Based on interviews, observations and archival data, the findings revealed that proximal role models, a focus on long-term development and a strong and coherent organizational culture was important across clubs. Nonetheless, those studies had an analytical focus that was limited to talented athletes at the junior level (15-21).

Therefore, research that aims to describe and understand the role of the organizational structures in which youth athletes are embedded during their early stages of development seem warranted (Wattie, Baker, Cobley, 2015; Wattie, Schorer, & Baker, 2017) and have recently been called for in both handball (Bjørndal, Ronglan, & Andersen, 2015) and football (Sarmento et al., 2018).

In the past decade, a small emerging body of research (Wattie, Baker, Cobley, 2015) has investigated one such aspect: namely, athletes' place of early development. This aspect highlights the crucial role that the "location in which children spent their developmental years" (Côté et al., 2006, p. 1067) has on an athlete's development (Baker & Logan, 2007) and early sports participation (Turnnidge, Hancock, & Côté, 2014). The findings, particularly those from North American (Bruner, Macdonald,

Pickett, & Côté, 2011; Côté et al., 2006) and Australian studies (Cobley et al., 2014), have shown that smaller communities seem to develop a disproportionately high number of elite athletes.

Until now, conventional empirical approaches have been valuable in emphasizing the role of the size of athletes' place of early development in athletes' development to expertise. In conventional research regarding the place of early development, the size of an athletes' city or community of birth has been a spatial representation used to differentiate athletes for the purpose of developing descriptions and explanations of athlete development and sports participation (Balish, Rainham, & Blanchard, 2016; Bruner et al., 2011; Côté et al., 2006). Although this line of research is still in its early phase (Wattie, Baker, Cobley, 2015), these studies have so far been characterized by the pursuit of an optimal community size for talent development. For instance, since the notable study by Côté and colleagues (2006), it has been advocated that elite athletes across sports and countries (at least in North America and Australia) are generally more likely to be born in communities with fewer than 500,000 people and have the highest probability of being born in communities with between 50,000 and 100,000 inhabitants (Abernethy & Farrow, 2005; Bruner et al., 2011; MacDonald, Cheung, Cote, & Abernethy, 2009). Nevertheless, some European studies have shown that the community size in which elite athletes are most likely grow up differs among sports and countries (Baker, Schorer, Cobley, Schimmer, & Wattie, 2009; Lidor, Côté, Arnon, Zeev, & Cohen-Maoz, 2010; Lidor, Arnon, Maayan, Gershon, & Côté, 2014; Schorer, Baker, Lotz, & Büsch, 2010). Thus, it seems that only an "optimal community size" for developing athletes has been shown in Australia and North

America. Recently, the findings from a Canadian study have also challenged the community size narrative. By separating Canadian NHL draftees according to their respective provinces, Wattie and colleagues (2017) found variable community size effects among the 7 provincial regions of Canada. Only the province of Ontario demonstrated community size results that were congruent with previous studies. Therefore, the "generalizability of the community size narrative, as previously described for NHL players, may not extend to most regions within Canada" (Wattie et al., 2017, p. 9) or perhaps most sports and countries.

These findings suggest a need to reorient our ways of categorizing the spatial representations of athletes' place of early development. This reorientation ought to provide descriptions and explanations of athletes' place of early development that can be useful. In a comment on the development of research in the accounting community, Hopwood (2008) noted:

> At a time when the accounting mainstream has increasing difficulty communicating with the world of practice, much could be gained from initiating an alternative set of dialogues that would have the potential to illuminate the relevance of more diverse research approaches. It could provide a wider variety of research approaches with a rationale that is grounded in both an intellectual and a pragmatic agenda. (Hopwood, 2008, p. 96)

These constraints seem to be similar in youth sports since researchers for many years have noted gaps between research and practice in sports (e.g., Martindale, Collins, & Daubney, 2005; Gould, 2016; Holt & Knight, 2014), specifically in youth sports (Holt et al., 2018). Hopwood suggest that the nature of research may also cause this gap since studies have not been able to use a wider variety of research approaches to

produce knowledge that appeals to practitioners. This suggestion is aligned with the recent recommendations by Wattie and colleagues (2017) in studies of place of early development. Indeed, there are limited studies within the field that have an exploratory design. To date, such studies have shown that the accessibility of sports facilities (Carlson, 1988), a local expert coach (Pennell, Cassidy, & Gilbert, 2017) and a community sports identity (Balish & Côté, 2014) are important aspects that contribute to athletes' early development. Exploratory studies would provide further knowledge regarding the mechanisms that seem to underlie the effects shown in various studies (Bruner et al., 2011; Côté et al., 2006; Schorer, Baker, Büsch, Wilhelm, & Pabst, 2009). Thus, it seems appealing to combine methods since "a combination of methods allows a more complete and comprehensive picture of the studied phenomenon to emerge and can also generate new insights" (Sparkes, 2015, p. 49). This is highly needed if we are to understand the effects shown in research and ultimately formulate recommendations for practitioners based on well-established grounds.

This thesis provides the opportunity to explore various representations of players' place of early development and to examine the aspects related to players' place of early development that contribute to talent development. Consequently, this thesis has evolved as a collection of studies that explores players' place of early development with the aim of acquiring a comprehensive picture of the role of players' place of early development in Danish handball and football players.

Therefore, the overall aim of the thesis is **to examine how players' place of early development influences their development to expertise**.

Consequently, the research question of the thesis was as follows:

Which aspects of players' place of early development influence their development to expertise?

This line of study was first examined by understanding the context of the thesis: A study of Danish football and handball using the conventional methods of the field of place of early development. This suggested the importance of proximity to talent clubs, a suggestion that was further examined in the second study to clarify its context. Finally, in the third study, a qualitative study was performed to further explore other aspects related to players' place of early development.

To answer the research question, three interrelated research questions and objectives were proposed for each paper:

Paper I: The research question of paper I was *What is the association between elite players and the population size and density of their place of early development?*

The objective of paper I was to examine the relationship between elite player status in handball and football and the population size and density of the players' place of early development. The specific objectives were to investigate the following: (1) the effect of the place of early development on elite Danish handball and football players; (2) the difference between population size and community density as a proxy for the developmental environment; and (3) the differences in the impact of population size and community density on elite and youth players.

Paper II: The research question of paper II was *What is the association between elite youth players and the size, density and proximity to talent clubs at their place of early development?*

The specific objectives of paper II were to 1) study the relationship between the probability of becoming an elite youth football or handball player and the population size and density of the player's place of early development, and 2) the relationship between the proximity of a player's place of early development to a talent club and the likelihood of reaching elite youth level in Denmark.

Paper III: The research question of paper III was *How do coaches and talent managers perceive the possibilities and obstacles of players' early development pathways from local clubs to identification in talent clubs?*[1]

The specific objective of paper III was to examine coaches' and talent managers' perceptions of the possibilities and obstacles in youth football players' development pathways, which include both the early development phase and the identification of talent from local to talent clubs in Denmark.

In the following chapter, I will provide a summary of different research and applied perspectives in talent development since previous research has informed the research process of this project. First, I outline three perspectives within talent development - namely, a biological perspective, a training perspective and an environmental perspective - and describe the perspectives taken in the thesis.

[1] Subsequent to the submission of paper 3, two terms in the aim of the study have been slightly altered. Possibilities and obstacles are regarded as more precise terms, since the different aspects at community, club and team level cannot be considered as vital or deterministic demands or barriers, which the initial terms (requirements and barriers) could indicate.

CHAPTER 2. TALENT RESEARCH

It seems as if a heritage exists in the global understanding of talent; namely, there is a persistent belief that one is born with (or without) a talent. This notion is still held by many researchers, practitioners, parents and authors. For instance, a recent book about the current Danish Formula One driver Kevin Magnussen is named "Born to Formula 1" (Finderup, 2014). However, since recent decades of research have shown that talent development is a complex, multi-dimensional process (Abbott et al., 2005; Reilly et al., 2000), this notion is insufficient as a solitary perspective. Instead, there is a need to appreciate and adopt a multi-dimensional perspective regarding the development of talent. Such perspectives are presented in the following sections.

2.1 FROM PLATO TO PRESENCE

The notion of talent as innate can be traced back to Plato, who assumed that the gods determined people's skills and position in society and, more specifically, the metals from which people were made.

> The God who created you has put different metals into your composition – gold into those who are fit to be rulers, silver into those who are to act as their executives, and a mixture of iron and brass into those whose task it will be to cultivate the soil or manufacture goods (Eysenck, 2009, p. 9)

The quote from Plato reveals a notion that individuals are born with different potential, which directs them to different destinies in life. The notion that we have different talents given to us by God is also found in a parable in the Bible: "For it will be like a man going on a journey, who called his servants and entrusted to them his

property. To one he gave five talents, to another two, to another one, to each according to his ability." (Psalm 25; 14-30, The parable of the talents). However, as the parable evolves, it becomes clear that the servants' talents are not considered a deterministic predisposition. Rather, the given talents seem to be the starting point from which the servants should invest both time and effort. Consequently, the parable demonstrates an initial adjustment of the notion of talent. Talent (or talents) was still something that each individual was given, but each individual also had the possibility of improving these talents through effort. This notion is closely connected to modern scholars, such as Bryan & Harter (1899, 1897), who investigated Morse code operators' efficiency at learning their tasks. This pioneering work began a long-held research tradition and a perspective within talent development research, which investigates the improvement of performance among individuals over time (Lee & Swinnen, 1993). Such works underline the importance of how individuals are nurtured rather than focusing only on their innate capabilities. From a Rortyan position (1990), it seems apparent that the different perspectives, as well as the subsequent transformation of beliefs about talent throughout history, is contingent on historical and cultural developments. Therefore, the evolution of modern scientific ideals in the late 19th century may have led to the alteration of widely held notions of talent. Therefore, the talent perspectives presented below can considered to represent the chronological order of the beliefs that led to the manifold modern notions of talent (Storm, 2015). Consequently, the following talent perspectives should be viewed as different modern scientific and practical perspectives that have been influenced by developments in society in general, particularly in science.

Considering the modern scientific endeavors in sports talent development and inspired by scholars such as Henriksen (2010) and (Baker, Cobley, Schorer, 2012, p. 4) one can advocate that three perspectives on talent exist: a biological perspective, a training perspective, and an environmental perspective. These perspectives provide a way for both researchers and practitioners to summarize their beliefs and actions (Morgan, 2007: 50) and therefore are essential focuses of reflection for both researchers and practitioners . Aligned with a pragmatic approach, these perspectives should be considered "constructed entities" that are fluid rather than static (Freshwater & Cahill, 2013). The following sections briefly describe the perspective and then describe where this thesis is primarily positioned.

2.2 THE BIOLOGICAL PERSPECTIVE: GENES AND GIFTS

The *biological perspective* insists that talent primarily relies on a genetic predisposition (Baker, Cobley, Schorer, 2012). That is, an individual is born with innate capacities that influence the possibility that he or she will develop expertise.

In modern times, Sir Francis Galton is acknowledged to have initiated the scientific study of human development to expertise as early as in 1881 (Galton, 1979). Galton introduced the notion that *both* innate capacity and the ability to work hard were determinants of the development of expertise. Thus, Galton's work followed in the footsteps of the biblical notion of talent: namely, that talent was given but also required hard work to be fully realized.

Practitioners and researchers positioned within this perspective emphasize the importance of early talent identification and selection within talent development

(Durand-Bush & Salmela, 2001; Stambulova, 2009) since there is a strong belief that one can detect early indicators of talent. However, studies have found little empirical support for this notion of talent (Bergeron et al., 2015; Lidor, Côté, & Hackfort, 2009). Nevertheless, Bouchard and colleagues (1995) indicated that several variables related to physical performance are genetically constrained, such as resting heart rate (An et al., 1999) and maximal aerobic capacity (Bouchard et al., 1998), while an individual's response to exercise training also appears to be influenced by his or her genetic makeup (Bouchard et al., 1999). Furthermore, studies have found common anthropometric characteristics in elite players, such as height in male handball players (Michalsik & Aagaard, 2015), and common physiological characteristics, such as speed in adolescent male football players (Huijgen et al., 2009).

However, for a number of years, the results of various studies have challenged the paradigmatic notion of talent as innate. First, the idea that one can identify predispositions early in an athlete's developmental process has been shown to be highly problematic since indicators of athletic talent, such as body size, power and speed, are confounded by maturation (Pearson, Naughton, & Torode, 2006). Second, although some genetic predispositions seem to be favored within specific sports, such as height in handball (Gil, Zabala-Lili, Bidaurrazaga-Letona, 2014), there are essential exceptions in which athletes who do not possess these characteristics develop into elite players. Therefore, it is perilous to identify talent on the basis of genetic composition alone. Consequently, searching for talented players with a specific genetic makeup seems to be a detrimental approach to contemporary talent identification (Baker, Cobley, Schorer, 2012). Therefore, we must acknowledge that

while genetic makeup certainly *does* influence an individual's developmental process in sports, genetic makeup alone cannot explain or predict athletes' pathways to elite level. Thus, while knowledge of the biological perspective can prompt practitioners to reflect on the importance of athletes' genetic makeup and their likelihood of reaching elite level, there is nevertheless a need to embrace other perspectives, as proposed by several researchers, to ensure a more multidimensional approach to talent development (Abbott & Collins, 2004; Reilly et al., 2000).

2.3 THE TRAINING PERSPECTIVE: PRACTICING, PLAYING, AND LEARNING COMPETENCIES

Proponents of this perspective embrace the notion that appropriate training of skills and competencies leads to success in the pursuit to expertise. This research tradition stems from scholars such as the psychologist John Watson, who said:

> Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors (Watson, 1926: 9 as cited in (Hergenhahn & Henley, 2014, p. 406).

This so-called radical social deterministic viewpoint posits that every individual begins life as tabula rasa – a blank slate – and therefore that individual development and behavior *only* stem from interactions between the environment and the individual. Based on this radical viewpoint, there has been particular emphasis on two trajectories for training athletes to excellence in sports talent development research (for a review, see Côté, 2007).

The so-called *early specialization pathway* involves participation at a young age in one specific sport and is characterized by large amounts of training (i.e., deliberate practice) with the primary goal of improving performance and development within the sport (Ericsson et al., 1993). Some studies have found an association between such early involvement and development to expertise in rhythmic gymnastics (Law, Côté, & Ericsson, 2011) and English football (Ford, Ward, Hodges, & Williams, 2009; Ward, Hodges, Starkes, & Williams, 2007). Alternatively, *the early diversification pathway* is characterized by involvement in a number of different sports activities at a young age (sampling). The sports activities are intended for enjoyment and fun (i.e., deliberate play) with a possible late or delayed specialization. At this point, the athlete will choose to engage in the primary sport through training activities that generally resemble deliberate practice (Côté, Baker, Abernethy, 2007). Several studies have concluded that this pathway not only leads to successful pathways to elite sports (Côté & Hancock, 2014) but also contributes to continued participation in sports, greater well-being and fewer injuries compared with the early specialization pathway (Côté, Baker, Abernethy, 2007; Wall & Côté, 2007). While the early specialization and early diversification pathways have been dichotomized in the literature, studies have shown that there are potentially more pathways within different national sports cultures, such as that of the Danish (Storm & Christensen, 2012). In addition to the strong focus on appropriate training, scholars have stressed the importance of acquiring psychological skills (Abbott & Collins, 2002; Freeman, 2000; Macnamara, Button, & Collins, 2010) as key tools for positively facilitating an individual's interaction with his or her environment and enabling the successful negotiation of a path to excellence.

However, although research has shown the importance of training specific skills in individuals, there has been some recent criticism of the notion that "perfect practice makes perfect [athletes]" (Janelle & Hillman, 2003, p. 28), with a proposal to adopt the alternative view that "perfect training at the right time makes perfect [athletes]" (Moesch, Elbe, Hauge, & Wikman, 2011, p. 289).

Most studies with a focus on training have asked elite athletes and elite youth athletes to retrospectively describe their training activities during childhood, introducing an inherent recall bias (Ford et al., 2009). More importantly, the use of retrospective accounts provides more information about the importance of certain training activities in the past than about what types of training activities are necessary in the future: "Not only may the composition of a given talent change as a person ages, but the optimal talent domain may change as well" (Simonton, 1999, p. 445). Furthermore, since studies have shown that development pathways are indeed highly influenced by the nation (Küttel, 2017) and the sports organization (Storm, 2015) in which athletes are embedded, it is difficult to recommend that sports federations and clubs adopt certain generic talent development pathways. Moreover, studies have shown that the development of talent is also significantly influenced by broader environmental aspects related to the development of athletes.

2.4 THE ENVIRONMENTAL PERSPECTIVE: RELATIONSHIPS MATTER

The *environmental perspective* advocates that talent is a result of the dynamic interactions between individuals and their environments. Therefore, an individual who is positioned in the right context, such as the right community, club or family,

has better opportunities to develop expertise.

Inspired by various theories (such as Bronfenbrenner's (1979) bioecological theory), a broad talent perspective has been cultivated in research and applied work in recent decades. Bronfenbrenner's (1979) own use of the word "ecology" refers to the interrelatedness between the individual and his or her context. More specifically, the ecological approach to the study of athletic talent focuses on an individuals' interaction with his or her broader development context, that is, how an athletes' social relationships within and outside of sports greatly influences athletic development processes.

Although this notion of talent has been called a "new perspective" (Storm, 2015, p. 25), scholars have been examining the influence of the environment on individuals in more than a century. As early as 1903, the German sociologist Georg Simmel (2002) noted that urban and rural locations create different settings, which influence individuals' mental life and physical activity. In sports talent development research, the Swedish scholar Carlson (1988) found empirical evidence regarding the influence of the community on athletes' development. For instance, Carlson found that most elite Swedish athletes at that time were from rural communities, had a play-oriented training milieu and were not regarded as the best in their age group (Carlson, 1988). At the same time, researchers discovered that athletes' birthdates (Barnsley & Thompson, 1988; Thompson, 1991) resulted in differing opportunities to join talent and elite teams (a phenomenon known as the relative age effect). Since then, studies have investigated the significance of community size (Balish & Côté, 2014), club environment (Henriksen, 2010), parents (Eccles & Harold, 1991), siblings (Côté,

1999; Stevenson, 1990), peers (Duncan, 1993) coaches (Bloom, 1985; Gould et al., 2008), culture (Storm, 2015) and welfare system (Küttel, 2017) in athlete development. Although researchers have called for studies that integrate an ecological perspective into talent development research (Araujo & Davids, 2009; Bengoechea, 2002; Krebs, 2009), to date, only limited empirical studies have investigated how contextual aspects promote or constrain players' development pathways (Bjørndal et al., 2015; Zibung & Conzelmann, 2017). Instead, studies have investigated the influence of talent development environments on athletes (Henriksen, Stambulova, & Roessler, 2011; Larsen, 2013; Martindale et al., 2010; Martindale, Collins, & Abraham, 2007). Both Henriksen (2010: 2011; 2014) and Larsen (2013) have conducted single case studies of sports environments (track and field, kayaking, sailing and football) in Scandinavia that have consistently developed international-level elite athletes. Based on interviews, observations and archive data, their findings suggest that proximal role models, a focus on long-term development and values such as openness and cooperation are central characteristics of these environments. Similarly, Martindale and colleagues (2007) also investigated the influence of well-established talent club environments in an interview-based study of elite coaches in the United Kingdom. The findings suggest that long-term aims, wide-ranging coherent messages and support, an emphasis on appropriate development instead of early success, a focus on individualized and ongoing development, and integrated, holistic and systematic development are what coaches perceived as optimal conditions in talent development environments. However, the cases that the authors selected limited their findings to junior talents aged 15-21 years and to well-established talent

club environments per se. Indeed, it seems that a considerable number of studies have investigated effective junior talent development environments. However, fewer studies have investigated what constitutes effective athlete development environments at local clubs and therefore before youth players enter academies and talent development environments. Knowledge of effective early talent development can eventually provide guidelines for such talent development organizations.

Although the described studies (Henriksen, Stambulova, & Roessler, 2011; Larsen, 2013; Martindale et al., 2010; Martindale, Collins, & Abraham, 2007) represent a significant step towards understanding athlete development, there are also limitations to their approach. Therefore, it is unknown whether the characteristics of successful communities and clubs are in fact unique qualities that successful environments have and less successful one's lack. Consequently, there is a need to determine the obstacles that early athlete development faces since different contexts may promote or hinder athlete development differently, as argued by Bjørndal and colleagues (2015). Another limitation within the environmental perspective is that most of the research has had an analytical focus on the environment and therefore has focused to a lesser degree on athletes' developmental process. From an ecological perspective, this has been highlighted as a limitation: "In place of too much research on development 'out of context,' we now have a surfeit of studies on 'context' without development." (Bronfenbrenner & Morris, 2006, p. 795). Further, Darling (2007) argued that an analytical focus solely on the role of the environment itself is a rather simplistic pursuit that mostly emphasizes the environment and not athletes' interaction with the environment (Darling, 2007). Thus, studies in talent development

should not only focus on what characterizes the environment itself but also on the dynamic role of the interaction between individuals and environments. Consequently, some researchers have suggested studies that investigate athletes' early interaction with the environment along their development pathways (Haugaasen & Jordet, 2012; Hornig, Aust, & Güllich, 2017; Zibung & Conzelmann, 2017).

For decades, athletes' childhood or early development experiences have been shown to be crucial to achieving elite status since these experiences may influence athletes' motivation to learn specific skills and how and when these skills are developed (Bloom, 1985; Côté, 1999). Evidence suggests that expert development is initiated in an environment in which children are exposed early and regularly to sporting activities (Côté, Baker, Abernethy, 2007), especially in the case of football (Sarmento et al., 2018). For instance, in an interview-based study of Olympic swimmers and their parents, Bloom (1982) reported that nearly all swimmers had an ease and a special feeling in the water. The swimmers' parents described that feeling of ease as a trait among the swimmers at the age of 3 to 4. Furthermore, other retrospective studies of elite athletes have shown that positive experiences with a coach, accessibility to sports facilities, enjoyment of the sport, early success, and engaged support from parents are some of the critical occurrences that predetermine an individual's likelihood of achieving expert status in an elite sport (Carlson, 1988; Côté, 1999; Kalinowski, 1985; Monsaas, 1985). While a considerable number of studies has examined the type and amount of training athletes receive, less is known about the environment in which athletes develop from an early age (Zibung & Conzelmann, 2017).

As early as 1987, Curtis and Birch investigated the association between North American ice hockey players' birthplace and their athletic success. The study showed an underrepresentation of Canadian players in communities with fewer than 1000 inhabitants and in communities with over 500,000 inhabitants. Côté and colleagues (2006) supported these results in a study with a North American sample across sports such as basketball, golf, ice hockey and baseball. Furthermore, sport-specific comparative analyses using overall effect sizes (Cohen's *d*) suggest that the athletes' birthplace contributed to the likelihood of attaining elite status to a greater extent than their relative age did. Thus, aspects of the surrounding environment, such as the size of the city, seem to be more influential in the development of sport expertise than the better-known aspect, the relative age effect. However, the results have been inconsistent among European countries and different sports (Baker et al., 2009; Bruner et al., 2011). Therefore, the optimal community size for athlete development does not seem to exist. Furthermore, this approach also has methodological implications. For instance, a comparison study between Canadian and English talent development in football found that Canadian talent development was arranged by provincial associations, while it was organized by professional clubs in England (Holt, 2002). Such organizational differences may play a role in the findings regarding the effects of the place of early development across countries. As an example, Holt (2002) showed that the professional clubs in England had a higher degree of professionalization. This may be a result of a survival strategy of the professional club. Consequently, the pursuit of an optimal community size may lead to a search for generalization across sports and sport systems, which may overlook central

aspects within athletes' early development. Wattie and colleagues (2015) called for studies that provide a more detailed, mechanistic account of the role of athletes' place of early development and a consideration of mechanisms related to individual, environmental and sport-specific constraints. This call is in line with a recent suggestion by the International Society for Sport Psychology (ISSP), which states that we need to rethink sport and exercise psychology research and practice through a "culturally reflexive lens" (Ryba et al., 2013, p. 183).

2.5 AN INCLUSIVE TALENT PERSPECTIVE

The described perspectives should not be interpreted as representing a chronological or hierarchal order since talent identification and development in sports is a complex combination of different aspects. The description of these talent perspectives instead demonstrates that each paradigmatic stance regarding talent development is useful to some degree in both research and practice. According to bioecological theory (Bronfenbrenner & Morris, 2006), which acknowledges the individual's process (activities such as training), the person (genetic makeup), the context (such as the geographical location of development) and the time (the specific time of development), it appears necessary to consider the different perspectives to understand the complex development processes that occur. This stance is also inherent to the pragmatic conception of science underpinning the thesis since the approach is not confrontational but conversational (Rorty, 1990). Along these lines, Kimble (1993) also suggested that the dynamic relationship between nature and nurture may best be described as follows: "asking whether individual differences in behavior are

determined by heredity or environment is like asking whether the areas of rectangles are determined by their height or width" (p. 13–14). Thus, the perspectives all play a role in any talent development process and often cannot be distinguished from one another in practice. Therefore, this thesis does not exclude the significance of athletes' genetic make-up or their nurturing history in the development of expertise. Thus, it is driven by a pragmatic approach in which all perspectives are acknowledged as valuable since they can guide different practices or reflections about practice. However, it seems highly difficult and probably impossible to address all perspectives within specific scientific studies. Therefore, the primary talent perspective that a researcher embraces informs the research questions that can feasibly be addressed. For instance, the initiation of this thesis was guided by a sincere interest in the influence of the interaction between the environment and players' development of expertise. Since this thesis investigates the influence of the place of early development, the analytical focus is on the interaction between athletes' location and their development process.

CHAPTER 3. A PRAGMATIC STANCE

Researchers have described a gap in field-based observations and orthodox approaches to knowledge construction between research evidence and sports practice, such as coaching practice (Cushion, Ford, & Williams, 2012), and practices within sport psychology (Duda, 1996). Martens (1979) claimed that this gap has led to the belief within applied sports psychology practice that "experiential knowledge and common sense have been more appealing, and usually more beneficial, than knowledge from sport psychology research" (p. 95). Therefore, several researchers within sports psychology research have suggested that a pragmatic approach is favorable (Biddle et al., 2001; Culver et al., 2003; Giacobbi et al., 2005). The following chapter describes the tenets of the pragmatic stance and the consequent actions undertaken within the research process of this thesis.

The scientific stance in this thesis was mainly inspired by pragmatic scholars, such as James (1907), Dewey (1931) and especially the more modern proponent, Rorty (1990). This stance was selected on the basis of the author's sincere interest in everyday practices in sport settings and the consequences of these practices and from the perspective that the project may improve the conditions that individuals (in this case, players) experience in their everyday lives (Rumens & Kelemen, 2013, p. 3). A pragmatic approach recognizes practice as a complex "interweaving of social agency and temporality" (Elkjaer & Simpson, 2011, p. 79). This means that purposes and events are inseparable from "the continuity of experience", which is shaped by a dynamic interplay between the social environment and the past and future.

Although pragmatism is not considered a "unified body of ideas" (Rumens & Kelemen, 2013, p. 3), it represents characteristics such as utility and practical solutions (James, 1907). Inspired by the pragmatic stance, this thesis serves to *edify*, which means to participate in "an ongoing engaged conversation" (Bernstein, 1989, p. 6) in both the academic and applied fields and to encourage practitioners to critically reflect on and reappraise their commonsense knowledge (Schwandt, 1996). Specifically, this research project aims to stimulate reflections on the influence of players' place of early development on the practices of both talent development and talent identification.

It has been suggested that there are four basic belief systems that constitute a paradigmatic stance: axiology, ontology, epistemology and methodology (Guba & Lincoln, 2005; Morgan, 2015). Therefore, the following sections will briefly describe how the four belief systems have aided the actions undertaken within the thesis.

3.1 AXIOLOGICAL REFLECTIONS

According to Dewey (1931) and James (1907), the consequences of scientific inquiry require both reflection and analysis. Thus, an ongoing consideration of the practical, moral, and ethical consequences of knowledge construction is a point of reflection throughout the research process. For instance, the third study was initially designed as a number of focus group interviews. However, when considering the different positions in terms of power issues, it became clear that participants at the local and talent club level could not necessarily speak freely in front of representatives from the national federations; there was a risk that the participants would be mute during

specific questions. Therefore, the design of the study changed to interviews with each participant to ensure openness and trustworthiness, which is vital in interview studies (Brinkmann & Tanggaard, 2010). The change aimed to ensure a good collection of data. However, from an axiological point of view, it also aimed to ensure that the participants could speak freely during the interviews without a threat to the their jobs or future careers. Consequently, the change in the design of the study promoted an atmosphere of trust and openness, which are important values within the research process. Furthermore, during the research process in general and in the meetings with practitioners specifically, it was important to embrace the axiological value of curiosity to ensure the type of open and trustworthy atmosphere that has been shown to stimulate both reflection and cooperation (Kvale & Brinkmann, 2009; Kvale, 2003). For instance, the meetings with practitioners were organized by with a sincere interest in both the scientific and the practical data on players development processes.

3.2 AN ONTOLOGICAL STANCE

Pragmatists are set apart from positivists and scientific realists, who believe there is single reality and/or an objective truth or "God's-eye view" of the world that is unobstructed by the influence of sociocultural conditions and subjective biases (Rorty, 1990, p. 2). Pragmatists view this supposed truth as "irrelevant to our needs and our practices" (Rorty, 1990, p. 2), and Rorty even declares the realism debate pointless. However, (neo-) pragmatists also deny the notion of a constructed reality, since reality is somewhat correlated with our actions. Therefore, the question is not whether a ball exists but what a ball can be used for. Consequently, a pragmatic

approach is an alternative to positivism and constructivism for researchers who are more interested in social change than in the ontological and epistemological assumptions of paradigms (Nelson & Evans, 2014). Therefore, a pragmatic approach disrupts the dependence on a metaphysical version of the philosophy of knowledge as a fundamental lens in social research. For these reasons, Rorty (1990) suggests that pragmatists should abandon discussions that concern the correspondence of theory and reality since "reality is indifferent to our descriptions of it, and […] the human self is created by the use of a vocabulary" Rorty (1989, p. 6). From a neo-pragmatic approach, Rorty quickly rejects truth:

> Truth cannot be out there—cannot exist independently of the human mind—because sentences cannot so exist, or be out there. The world is out there, but descriptions of the world are not. Only descriptions of the world can be true or false (Rorty, 1989, p. 5).

Therefore, Rorty suggests, "we should at last have assimilated what was true in the Romantic idea that truth is made rather than found" (Rorty, 1989, p. 6-7). This notion has guided the research process by using different methods to ensure diverse "descriptions of the world", which should lead to an applicable truth that can contribute to reflections among practitioners (and researchers) and ultimately, to change.

3.3 EPISTEMOLOGICAL NOTIONS

Inspired by both Dewey and Rorty, an essential pragmatic notion in epistemology is the 'non-representational' view of knowledge (Rorty 1990, p. 188). This means that research should no longer aim to accurately represent reality or to provide an

“accurate account of how things are in themselves” but to “aim at utility for us” (Rorty, 1999, p. 26). From this perspective, the aim of knowledge is not to represent the world but to cope with it (Mounce, 1997). Although positivists and constructivists seem to have dichotomous epistemological views (Guba & Lincoln, 2005), the pragmatic approach argues that a continuum exists between objective and subjective viewpoints. The choice of viewpoint is contingent on the nature of the research question being asked and the particular point in the research process (Creswell, 2003; Teddlie & Tashakkori, 2009). A pragmatic stance finds that knowledge is not about an abstract relationship between the knower and the known (Rumens & Kelemen, 2013, p. 9). Instead, inspired by hermeneutics, there is an active process of inquiry that creates a continual back-and-forth movement between beliefs and actions (Morgan, 2014). Instead, scientists should be aware of the context in which research applications occur since the role of social-historical-contextual apects in human experience should not be underestimated (Lincoln & Guba, 2000). Furthermore, through continued work and examination of possible consequences, knowledge claims could be supported by the weight of available evidence and logical arguments to apply to the specific claims. Since knowledge construction is contextual and influenced by the present cultural and historical conditions, findings are considered objective when a scientific community reaches agreement about them. Moreover, Biesta (2010) argues that knowledge can only provide information about our actions and their results and not about ‘‘once-and-for-all truths’’ (p. 96). The thesis transcends the incompatibility thesis, which claims that quantitative and qualitative methods are incompatible since the use of these methods creates abstract and epistemological

harms. Instead, this thesis employs a pluralist or *compatibility thesis.* as posited by Howe (1988), which states that it *is* appropriate to mix qualitative and quantitative methods.

> The incompatibility thesis, like the drunkard's search, permits the "lights" to determine what is to be looked for and where. But why should paradigms determine the kind of work one may do with inquiry any more than the amount of illumination should determine where one may conduct a search? The possibility of modifying a paradigm (lighting apparatus) in response to the demands of research (the location of the key) seems to go unnoticed. (Howe, 1988, p. 13).

Aligned with the abovementioned notions, the pragmatic approach has strongly influenced the role of the researcher and the ongoing research, as highlighted in the following section.

3.4 PRAGMATIC ACTIONS

The pragmatic stance has consequences at different levels of the research process. Three main actions - pursuing usefulness, ongoing conversations and mixing methods - have been identified and will be briefly described in the following sections.

Pursuing usefulness

The thesis initiated from curiosity based on studies of athletes' place of development. In the beginning of the research process, I as a researcher doubted the usefulness of this research interest. Fortunately, two informal presentations were arranged with the national youth coaches in the handball and football federations during the first study. The sincere interest and practical reflections that the meetings facilitated among the coaches and myself advanced the research process further. For instance, combined

with the literature and previous results, the feedback provided from practitioners guided the research questions in both the second and third articles. These meetings also reinforced that the role of the researcher through the research process is to "encourage practitioners to critically reflect on and reappraise their commonsense knowledge" (Schwandt, 1996, p. 64), both generally, in talent development, and specifically, in regard to players' place of early development. Indeed, this aim is reflected in the research process and to a lesser degree in the individual papers. This was a deliberate choice that the author made for several reasons. For instance, as the first paper only described the influence of community size, density and proximity, it was difficult to propose specific actions as a result of the research. Instead, the findings themselves were considered to stimulate reflection. Second, as some practitioners, such as coaches and talent managers, have gained considerable experiential knowledge through their positions (Christensen, 2009), researchers should be careful about proposing recommendations. Instead, the pragmatic perspective prompted the author to engage in conversations on the specific findings and the possible consequences of these findings.

Ongoing conversations

Pragmatism has been criticized as creating incremental changes rather than more fundamental, structural and revolutionary changes in society (Johnson & Onwuegbuzie, 2004). Thus, during the research process, I as a researcher specifically focused on sharing the findings with the leaders and managers in the federations and talent clubs since they have the power to design better policies and strategies to improve the conditions of clubs and players. Communication between researchers and

practitioners was characterized by axiological values such as humility and respect in the hope of a fruitful interaction that would encourage practitioners to critically reflect on and reappraise their commonsense knowledge regarding the development of players (Schwandt, 1996). Throughout the research process, I as a researcher experienced relationships with practitioners, especially in handball, that generated critical reflections and abductive reasoning. For instance, conversations about the findings generated inductive and deductive movements via the continuous conversion of various findings from the studies and shared experiential observations within the field into hypotheses. These hypotheses were then transformed into actions for both the researcher and the practitioners. This procedure was crucial to the research process since it combined previous findings, research literature and experiential knowledge into new research questions (see figure 1). Nevertheless, even in the early phase of the research process, the close collaboration likewise inspired the handball talent manager to act to reduce the differences among different rural and urban youth elite players. For instance, the national talent manager created talent camps in a rural district with the aim of creating better opportunities for rural players at the national youth level in response to the findings from the first paper suggesting that rural players struggle to reach elite levels. These initiatives were appreciated since the pragmatic approach emphasizes critical reflection among practitioners (Schwandt, 1996) and problem-solving actions (James, 1907). Nevertheless, there was also a concern that such actions could bias the forthcoming sample of national youth players, which was to be collected simultaneously. Consequently, to ensure that the national youth samples were not exposed to possible initiatives based on previous findings, I

decided to include data from a pilot study on national youth players in both handball and football. This was decision was made because it would have been difficult to know whether the descriptive study was describing the effects of a sort of experiment of nature in the field (Bronfenbrenner & Morris, 2006), which would have required a description before and after the experiment and baseline data and which could interfere with the descriptive studies. To my knowledge, no such experience has been highlighted, particularly in works by central proponents of the mixed method approach, such as Johnson and Onwuegbuzie (2004) and Teddlie and Tashakkori (2009).

Mixing methods

Research in specific domains is often dominated by specific methodologies and limited methods, and therefore, the construction of knowledge can benefit from the use of multiple methodologies and methods (Johnson & Onwuegbuzie, 2016). In the field of place of early development research, nearly all studies have used a variety of quantitative methods (odds ratios, Monte Carlo simulation, etc.) to examine the influence of elite players' place of early development. However, qualitative methods have been called for to better *understand* the mechanism underlying the observed effects (Wattie, Baker, Cobley, 2015). Thus, researchers within the field have called for the use of alternative methods to expand the production of knowledge within the field.

CHAPTER 4. METHODS

Aligned with a pragmatic approach, the overall study design is positioned within so-called mixed method research. More specifically, the thesis investigates place of early development in three interrelated studies that incorporate different methods.

Since the research project was embedded in a specific context, the organization of sports in general and specific sports is described briefly below.

4.1 THE CONTEXT OF THE DANISH SPORTS SYSTEM

This section aims to describe how the Danish sports system is organized. The organization in which athlete development is embedded influences the interactions between athletes and their surroundings.

The purpose of the Danish organization of sports, similar the organization of sports in other Scandinavian countries, is to facilitate both mass participation and elite sports participation (Ibsen & Seippel, 2010). The system is influenced by a strong tradition of volunteerism and democracy. These are vital aspects of all organization levels of sports in Scandinavia – from federation to club level. Most often, Danish sports are organized in a so-called heterarchical organizational structure since several key agents, such as local clubs, professional clubs, and volunteers, have the opportunity to take new actions that may be constructive or fruitless.

Thus, Danish (and Scandinavian) sports activities are strongly characterized by local citizens rather than by municipality, schools or private enterprises. Consequently, local clubs rely heavily on volunteers at both the manager and coach level. Moreover,

most professional elite clubs, especially in football and handball, are founded on strong local clubs. Therefore, the primary field for talent development is typically the local community-based club, which relies on volunteers for all functions. Nevertheless, a recent development in Denmark has centralized and professionalized junior talent development in a variety of sports by transforming specific local schools in larger communities into elite schools, which coordinate with established local clubs for talent and elite engagement (Skrubbeltrang, Olesen & Nielsen, 2016). Although most Danish sports, including handball and football, are rather similar in their overall system, there are particular differences in their talent development structure.

Danish talent development structure in football

The national football association is responsible for the identification and development of national youth players from under 16 (U16) until under 21 (U21). The association also distributes talent development licenses to certain professional elite clubs. These licenses are divided into three hierarchical categories – A- (12 clubs), B- (14 clubs) and T-license (13 clubs) - throughout the country. An A-license represents the highest level, and these clubs need to ensure cooperation with regional clubs to facilitate effective local player development. The national association has both material and human resources requirements for the clubs, such as the quantity of fields and the number of educated coaches. Clubs with A- and B-license approval receive extra economic resources, and their U17 and U19 teams are admitted to the highest-ranking youth leagues.

Danish talent development structure in handball

The national handball association ensures the identification and development of national youth players from U16 to U21. The association supports regional competition leagues at earlier developmental levels and a national competitive league for the U16 and U18 age groups. In principle, every local sport club and youth team is able to qualify for the highest-ranked U16 and U18 leagues through a series of decisive matches in the pre-season. Local sports clubs primarily select players from their local area and provide their own economic resources via sponsors and volunteers.

4.2 RESEARCH DESIGN

The aim of mixed methods research is to provide a more complex understanding of a phenomenon than would be accessible by using one approach alone (Creswell & Clark, 2010). As described by Johnson, Christensen and Turner (2007), mixed method research is:

> the type of research in which a researcher or team of researcher combines elements of qualitative and quantitative approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques for the broad purpose of breadth and depth of understanding and corroboration (p. 123).

This definition implies an essential characteristic of mixed method research; namely, *methodological eclecticism* (Teddlie & Tashakkori, 2009). The definition signals that mixed-method research "involves selection and synergistically integrating the most appropriate techniques from a myriad of qualitative, quantitative, and mixed methods

in order to more thoroughly investigate phenomenon of interest" Teddlie & Tashakkori, 2009, p. 286). Thus, aligned with a pragmatic approach, a researcher engaging in mixed method research selects the most appropriate and best techniques for answering the research question. Consequently, this thesis placed primary importance on the research question rather than on specific methods.

The thesis evolved with the overall status design of an iterative sequential mixed analysis (Teddlie & Tashakkori, 2009), which means that the results derived from one study inform the next research phase, while the methods are combined sequentially in different phases of the research process. This design was selected as it offers the opportunity to perform an in-depth exploration of the role of place of early development from different methodological perspectives that complement one another. This type of study design has been encouraged for examining complex phenomena in fields such as health and health care (van Griensven, Moore, & Hall, 2014). By combining methods, the study provides more nuanced and broader insight into a complex phenomenon and thereby provides a better understanding of that specific phenomenon (Frederiksen, 2014).

As figure 1 shows, the research process was initiated by a review of the talent development literature, with a specific focus on the role of place of early development. The research questions evolved on the basis of previous results of the research process but also as part of a complex process that considered the previous methods used in the field of research, the methods that yielded the previous results and the utility of the research question. Therefore, the research plan was characterized by flexibility since it was adapted according to the derived results. Indeed, the

methods chosen for each study have an equal status with one another (Giacobbi et al., 2005). For instance, the spatial analysis in the second study was a result of the supplementary findings from the first study, which showed an association between a high proportion of elite handball and football players and a high proportion of talent and elite clubs. Further, in dialogues with the researcher, the practitioners sought to identify different communities in different community-size categories. The combination of these findings led to the research question and the use of a geographical information system.

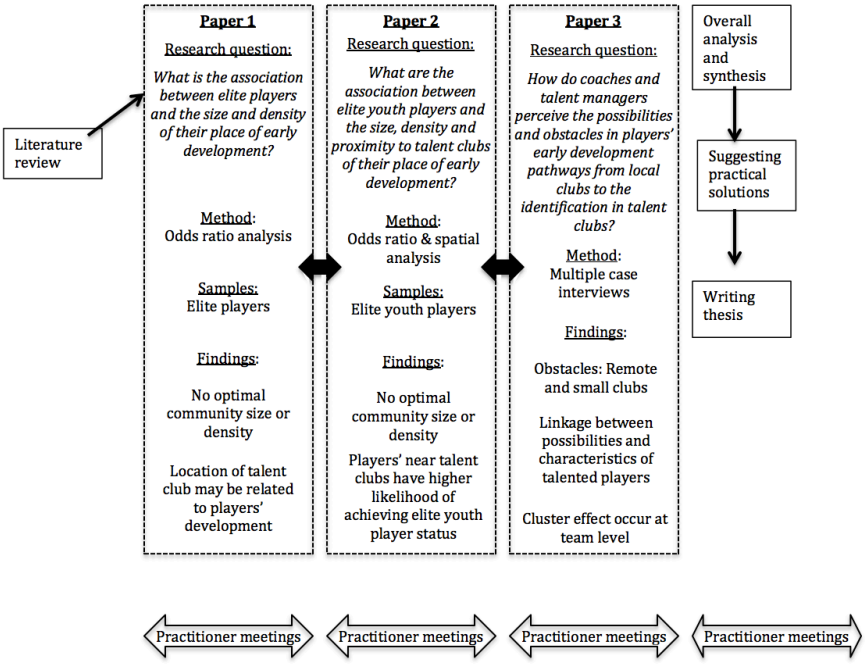


Figure 1: Graphic illustration of the research process

Within the three specific studies, it was decided not to combine quantitative and qualitative methods since the combination of such methods can result in numerous

complexities, such as the triangulation of data (Bryman, 2006; Johnson & Onwuegbuzie, 2007). Thus, more complex studies do not necessarily generate more complete answers (Bergman, 2011).

4.3 OVERALL METHODOLOGICAL RIGOR

Within this research project, methodological rigor was considered and carefully addressed through various strategies. Given the project's pragmatic stance, it is important to highlight that methodological rigor is a practical necessity as much as an abstract concept. Aligned with a pragmatic stance, Tracy (2010) advocated that the most important issue to consider is whether the data will provide for and substantiate meaningful and significant claims. Descriptions of and arguments for the methodological choices were presented in the previous section, which should provide substantial meaning. The significant claims are the reliability of the quantitative methods, that is, whether the findings can be reproduced, while the qualitative claims relate to the research strategy, such as the selection of participants. Thus, rigor has been thoroughly considered in each study and for each method.

These considerations were part of the dialogues with both fellow researchers and practitioners throughout both the quantitative (study 1 and 2) and qualitative (study 3) studies within the project. These ongoing dialogues ensured the consideration of the project's ability to be meaningful from an applied and research perspective. For instance, the visualization of the data through spatial analysis (GIS) in the second study was considered highly useful and meaningful by both practitioners and fellow researchers and therefore was a suitable method to include. An emphasis on rigor also

influenced the recruitment of the supervisors (and co-authors) as they complemented each other with their varied competencies, the inclusion of other colleagues in the review of the research processes and the presentation of the data to a variety of relevant research groups.

An important criterion for the judgment of rigor, specifically for mixed method research, is the integration of the findings, since "mixed method research is simply more than reporting two distinct 'strands' of quantitative and qualitative research." Creswell & Tashakkori, 2007, p. 108). Thus, it is necessary to integrate the strands to ensure a comprehensive understanding of the phenomenon under study. Assessments determined that the methodological strands of the project equally support and complement each other as they both underpin the main research question. While the descriptive statistical studies (study 1 & 2) mainly describe the influence that players' place of early development has on their development of expertise, the qualitative study primarily provided insight into the aspects of players' place of early development that influence players' development. Consequently, the methods complemented each other in achieving the aim of the overall study. To show the complementarity of the findings across papers, the findings are presented as a synthesized description in the paper summaries and discussed in relation to each other.

In line with Tracy (2010), generalization that has been incorporated into the thesis in general is *transferability*. Thus, an aim within the project was to "invite transferability by gathering direct testimony, providing rich description and writing accessibly and invitationally" (Tracy, 2010, p. 845). Consequently, in each paper and the thesis, it

was important to present a rich description of the data and the context in which it was collected. Smith proposed that transferability is addressed by the answer to the question "to what extent are the results transferable to other settings?" (Smith, 2018, p. 4). The answer to this question is that there are significant differences across sports systems across countries in general and in talent development systems among sports, and thus, the overall findings are not transferable. Nonetheless, the thorough descriptions of the methods used can be applied to similar studies of the role of players' place of early development in talent development in the same or other sports in other countries. Such studies may provide the same overview of the role of the place of early development as this thesis but will most likely result in findings that differ from those of the included studies.

Throughout the research process, various methods were used in the different studies. In line with other researchers who employed mixed method research within sports and exercise psychology (Sparkes, 2015), methodological rigor was addressed specifically for the quantitative and qualitative studies in this project.

In addition to the overall perspective on methodological rigor across studies, each study also considered a more conventional approach to the validity, reliability and generalizability of the project. In the following section, the strengths and limitations of each method are addressed, together with a brief section that reviews the rigor of the studies.

4.4 STUDIES 1 & 2

Odds ratio (OR) analysis: This epidemiological descriptive statistical method was selected for the first two papers since this method is capable of showing that "an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure" (Szumilas, 2010, p. 227). Further, OR analysis has previously been used in similar investigations (Baker, Shuiskiy, & Schorer, 2014; Finnegan, Richardson, Littlewood, & Mcardle, 2017; Hancock, Coutinho, Côté, & Mesquita, 2017). Our analyses considered the distribution of youth players across various community population sizes and densities compared with the distribution of elite and elite youth players. Accordingly, the *outcome* of the two papers refers to elite and elite youth player status, while the *exposure* refers to the size or density of the community. OR analyses were performed to illustrate the variances of the over- and underrepresented communities to which the players had been exposed. The same population subdivisions were used in both studies to facilitate comparisons to previous studies (Finnegan et al., 2017, Baker et al., 2014, Hancock et al., 2017). More specifically, players' place of early development was organized as an ordinal categorical variable with five subdivisions based on population size (<10,000; 10,000– 30,000; 30,000–50,000; 50,000–100,000; >100,000) and six subdivisions based on population density (<50; 50–100; 100–250; 250–500; 500–1000; >1000 pop/km^2). Furthermore, the subdivisions were inspired by subdivisions of density in Scandinavian countries from the Nordregio analysis institute (Hansen, Rasmussen, & Roto, 2011). ORs and confidence intervals (CIs) were calculated within each subdivision category, allowing an analysis of which community

categories were associated with the greatest likelihood (or chance) of developing elite and elite youth players. Furthermore, CIs assisted in estimating the precision of the ORs (Nakagawa & Cuthill, 2007). The confidence level is a complement of the level of significance (0.05), while intervals refer to a range of values (ORs) (Cummins, Curtis, Diez-Roux, & Macintyre, 2007).

First, ORs were calculated for each community category by comparing the odds of being an elite player with the odds of being a part of the youth population. This is consistent with the previously applied approach of using ORs to analyze the effect of players' place of early development (Bruner et al., 2011). Second, the OR of being a youth player compared with being part of the youth player population in a given community category was calculated. The odds varied significantly between the calculations. Since in epidemiological terms, the population with the greatest "risk" of becoming an elite player should be the registered youth players, youth players were used as the comparison sample in the second study. Ninety-five percent CIs were calculated for the ORs in both studies. An OR with CI limits (lower and upper) higher than 1 suggests that a disproportionately high number of elite and elite youth players were observed in a given community subdivision compared with the youth player population distribution. Thus, the methods supported the papers' aim to investigate youth players' probability (or risk) of becoming elite and elite youth players according to their place of early development.

Samples: Place of early development studies have primarily used the youth residents registered in each community to examine the likelihood of becoming an elite player in the respective community category (Bruner et al., 2011; Schorer, Baker, Lotz, &

Büsch, 2010). However, in epidemiological terms, the true "risk" population for becoming an elite player should be the registered youth players since these are the players "at risk" of becoming elite players of the sport in question. Furthermore, empirical evidence from Canadian ice hockey (Turnnidge et al., 2014) suggests that there are significant differences in the proportion of youth players in different community size groups. Since the focus of the project was investigating youth football and handball players' probability of becoming elite or elite youth players, both the first and second paper included registered youth players as the comparison sample.

In the first paper, senior elite players in both handball and football were included. Elite players were chosen as they provided the best opportunity to compare the results with previous studies, which also primarily included elite athletes (Baker et al., 2009; Côté et al., 2006). In the second paper, two elite youth player samples were chosen to provide better insight into current trends in talent development. These choices aimed to ensure that the results of this study are better able to make current practitioners reflect on their role in the place of early development effect.

Geospatial analysis (GIS): Geospatial analysis was applied in the second study to analyze players' proximity to talent clubs as a predictor of the development of expertise. A recent study (Woolcock & Burke, 2013) proposed that GIS is an appropriate method for investigating the influence of geographical aspects on talent development (Woolcock & Burke, 2013). The clear strength of this relatively new method is the contextualization of the statistical data since the geo-coded data can be used to create symbolic maps (Brewer, 2006).

The GIS analysis was carried out in four stages. The first stage comprised a calculation of the OR for being a youth elite league or national youth player compared with being a youth player in each community. Confidence intervals were not included since the small sample sizes in each community resulted in broad CIs, which indicate an imprecise OR. In the second stage, we combined our statistical data with geo-coded data on Danish communities. The geo-coded data were derived from an official Danish governmental website of The Administration of Data Supply and Efficiency ("Kortforsyningen," 2017). Both the statistical and the geo-coded data were added to a GIS called QGIS. In the third stage, the Jenks method (also called natural breaks) was applied to the statistical data to group the communities into five categories based on their OR. The Jenks method was selected because it ensures stronger within-category consistency and maximizes the variations among the community categories. The categorization of communities resulted in different colors on the geographical maps, which is a traditional approach in GIS (Brewer, 2006) to symbolize which communities were statistically more similar to each other than to other communities with alternative colors. In the last stage, the geographical locations of the respective talent clubs were indicated on the maps.

It should be noted that a major limitation of using GIS in the second study was the lack of opportunities to determine the significance of the results. Thus, the results rely more on the reading and perception of the maps more than on statistical power. Another limitation of the use of both GIS and statistical data is that the data are descriptive and only permit a few parameters of interest to be examined. Thus, to gain an understanding of the mechanisms that may have influenced the results of the first

two papers, it was necessary to include methods that were capable of exploring those underlying mechanisms.

Methodological rigor: The validity of a statistical investigation has been defined as the extent to which a phenomenon is accurately measured (Heale & Twycross, 2015). Validity was addressed by using youth player registration data as comparison samples in the OR analysis. Since youth players in general represent the "risk" population (i.e., the population whose members have the possibility of reaching elite level), the number of elite and elite youth players was compared with the number of youth players in general. Further, in the second study, GIS was included as a method. As with OR, GIS defined the players' place of early development as the municipalities where they had grown up. Since the GIS analysis aimed to investigate the relationship between the players' place of early development and the likelihood of reaching elite level, the use of municipalities as the players' place of early development seemed appropriate as a means of approximating players' proximity to talent clubs. Thus, the analysis only provides a valid investigation to some degree. The analysis could have been more precise if proximity had been more precisely defined in the study.

The generalizability of the quantitative studies within the thesis originates partly from the statistical-probabilistic generalizability. First, there is a high representativeness of Danish players in the sample since all samples of elite youth and elite handball and football players collected in the first two studies represent a return rate of 100 % (except handball elite players, which had a return rate of 78.5 %). However, it is acknowledged that the "statistical generalizability model is almost never fully realized, even though the research community usually acts as though it is" (Polit and

Beck, 2010, p. 1457). Despite the high degree of representativeness of the samples, this thesis was cautious about making broader inferences. Since there are significant differences in the organization of sports (Holt, 2002), community size (Baker et al., 2009) and community density (Hancock et al., 2017) among countries and especially continents, the statistical findings from the first and second study cannot be directly generalized to other countries. Therefore, the findings regarding the influence of proximity to talent clubs on other sports, particularly other countries and sports systems, seem to be difficult to generalize.

4.5 STUDY 3

Interviews: The in-depth qualitative interviews provided the researcher access to the participants' subjective experiences (Brinkmann & Tanggaard, 2010). This was specifically relevant in the third paper, which was an exploratory multiple case study that aimed to analyze what coaches and talent managers perceived as possibilities for and obstacles to players' early developmental pathways.

Samples: Since coaches and talent managers are key actors in athlete development (Bloom, 1985; Coté et al., 1995; Relvas et al., 2010), they were included in the study. Indeed, such participants have a unique position in the field that gives them knowledge of the possibilities and obstacles to players' early developmental pathways. Since players encounter both local clubs and talent clubs within the talent pipeline of the Danish sports system, participants were purposefully selected from three levels: local clubs, talent clubs and the national youth level.

Interview procedure: The interviews were semi-structured (Kvale & Brinkmann, 2009) to give the interviewees freedom to bring up issues that were personally important to them. The structure of the interviews was based on bioecological theory within four overarching themes: Process, Person, Context and Time (Bronfenbrenner & Morris, 2006). This approach enabled the interviewer to broadly explore the potential possibilities and obstacles at the early stages of player development. The semi-structured approach was used to yield in-depth responses regarding the interviewees' experiences, perceptions and knowledge about players' early developmental pathways.

Methodological rigor: Kvale and Brinkmann (2009) argued that the validity of qualitative interviews should be determined by the quality of their craftsmanship and the pragmatic criterion of truth. Thus, all phases of a study need to be considered trustworthy and designed to generate knowledge. Furthermore, validity (whether the project investigates what it is intended to investigate) is a concern (Kvale & Brinkmann 2009, p. 272). Kvale & Brinkmann propose that the validity of an interview study needs to be discussed throughout the project in relation to seven phases: the theme, study design, interview, transcription, analysis, validation and reporting (Kvale & Brinkmann 2009, p. 276). As a consequence, the validation of the third study was an ongoing process in which the craftsmanship of the qualitative interview was continually discussed by the author and colleagues in meetings. These discussions were characterized by openness and trust to ensure the transparency of the choices made during the process and the quality of the craftsmanship at each stage. For instance, during the crafting of the interview guide, the interviews and the data

analysis, there was ongoing reflection on the study's research question to ensure a strong link between the aim of the study and the analysis of data. For instance, in one interview, a participant confidentially expressed worries about the management of the participant's organization (and the management of society in general). After a while, we agreed to further discuss more relevant themes in the interview.

To ensure methodological rigor and trustworthiness (Sparkes and Smith, 2014), it was important to openly argue for the various choices within the paper and the thesis and engage in peer debriefing with colleagues. The peer debriefing sought to ensure that the researchers continuously and critically reflected on the classification of codes and the interpretation of data. For instance, after a session with a supervisor who had an exploratory focus, new themes, such as good facilities, emerged late in the analysis stage.

Olsen has argued that transparency is decisive of the quality of research in general and of qualitative studies specifically (2002, 2003). Consequently, it was important to provide a rich description of the data and the context in which it was collected. This was done by including a description of the organization of football in the paper and including a table with additional descriptive quotations from participants. Furthermore, transparency was ensured by providing a rich description of the methodological choices within the study. The third study adopted an analytical generalization strategy in which the findings can provide guidance for actions within similar situations (Kvale & Brinkmann, 2009, p. 288-289). This means that one should carefully consider to the degree to which the study findings are relevant and transferable to other situations. Since the anthropometric characteristics of talented

handball and football players (and therefore players of most other sports) differ, as does the organization of sports among countries and even among sports within countries (such as Danish handball and football), we should be cautious about generalizing the findings from the third study beyond the specific sport and country that were investigated. It could be argued that conditions at the micro level among football players may be more transferable as most youth football players engage in relationships with parents, coaches and teammates. Further, the design of the study seems to be transferable, which will allow other researchers to validate or add to the possibilities and obstacles found in the study.

CHAPTER 5. PAPER SUMMARIES

5.1 PAPER I

Aim: The specific objectives were to investigate: (1) the effect of the place of early development on Danish elite handball and football players; (2) the difference between population size and community density as proxies for the developmental environment; and (3) the differences in the impact of population size and community density on elite and youth players.

Findings: Table 1 shows the distribution of youth and elite football and handball players' place of early development for each community population size and density and the OR analysis results for these distributions. In football, there was an overrepresentation of elite players from communities with a population of 30,000 to <50,000 and from the communities with highest density. Overall, elite players were significantly underrepresented in the smallest communities and in communities with low population density. In contrast with football, elite handball players were overrepresented in communities with a population of 50,000 to <100,000 and in communities with a density of 100 to <250 pop./km2 and 500 to <1000 pop./km2.

	Football						Handball					
	Youth players		Elite players				Youth players		Elite players			
	No.	%	No.	%	OR	95% CI	No.	%	No.	%	OR	95% CI
Community size[a]												
≥100	20,878	14.4	38	17.9	1.30	0.91–1.85	4639	12.9	19	12.3	0.95	0.59–1.54
50 to <100	20,281	14.0	39	18.4	1.39	0.98–1.96	3890	10.8	27	17.5	1.75	1.15–2.66
30 to <50	22,960	15.8	48	22.6	1.56	1.13–2.15	4125	11.5	24	15.6	1.42	0.92–2.20
10 to <30	48,898	33.7	60	28.3	0.78	0.58–1.05	14,145	39.3	58	37.7	0.93	0.67–1.29
<10	32,004	22.1	27	12.7	0.52	0.34–0.77	9149	25.5	26	16.9	0.59	0.39–0.91
Community density (pop./km^2)												
≥1000	17,319	11.9	61	28.8	2.98	2.21–4.01	3056	8.5	13	8.4	0.99	0.56–1.75
500 to <1000	20,950	14.5	30	14.2	0.98	0.66–1.44	3097	8.6	22	14.3	1.77	1.12–2.78
250 to <500	20,461	14.1	42	19.8	1.50	1.07–2.11	3956	11.0	14	9.1	0.81	0.47–1.40
100 to <250	29,509	20.4	31	14.6	0.67	0.46–0.98	7409	20.6	46	29.9	1.64	1.16–2.32
50 to <100	32,568	22.5	29	13.7	0.55	0.37–0.81	10,963	30.5	36	23.4	0.70	0.48–1.01
<50	24,214	16.7	19	9.0	0.49	0.31–0.79	7467	20.8	23	14.9	0.67	0.34–1.04

[a]Numbers are in 1000s.

Table 1. Odds ratios (ORs) and confidence intervals (CIs) for being a Danish elite player in football or handball compared with youth players (census) across community sizes and densities. Reprinted with permission from Rossing, N. N., Nielsen, A. B., Elbe, A.-M., & Karbing, D. S. (2016). The role of community in the development of elite handball and football players in Denmark. European Journal of Sport Science, 16(2), p. 241.

The findings in table 2 also show that football talent clubs are more often located in communities with larger populations and density, while most handball talent clubs are located in communities of 30 to <50 people and a density of 100 to <250 pop./km2. The study also showed that these specific community categories had the highest probability of players reaching elite level, which suggests an association between the location of talent and elite clubs and the probability of reaching the elite level.

	Elite football clubs		Talent football clubs		Elite handball clubs	
	No.	%	No.	%	No.	%
Community size[a]						
≥100	4	33.3	5	33.3	2	14.3
50 to <100	3	25.0	3	20.0	3	21.4
30 to <50	5	41.7	5	33.3	4	28.6
10 to <30	0	0.0	1	6.7	5	35.7
<10	0	0.0	1	6.7	0	0.0
Community density (pop./km^2)						
≥1000	3	25.0	5	33.3	1	7.1
500 to <1000	3	25.0	3	20.0	3	21.4
250 to <500	2	16.7	3	20.0	1	7.1
100 to <250	3	25.0	3	20.0	6	42.9
50 to <100	1	8.3	1	6.7	2	14.3
<50	0	0	0	0	1	7.1

[a]Numbers are in 1000s.

Table 2: Distribution of talent and elite clubs in handball and football compared with community size and density. Reprinted with permission from Rossing, N. N., Nielsen, A. B., Elbe, A.-M., & Karbing, D. S. (2016). The role of community in the development of elite handball and football players in Denmark. European Journal of Sport Science, 16(2), p. 243.

Conclusion: This study showed the presence of place of early development effect in Danish handball and football, although no optimal community size or density was found across sports. A consistent finding across both handball and football was the underrepresentation of elite players in communities considered rural according to both population size and density. The findings show varied impact between youth and elite players in population size and community density. Furthermore, the proportion of elite players in specific community size and density categories seems to be aligned with the proportion of talent and elite clubs in those categories. This suggests that there may be an association between the proportion of elite players and the presence of talent and elite clubs.

5.2 PAPER II

Based on the results of the first paper, a hypothesis was derived that players' proximity to talent clubs during their early development may be associated with the likelihood of reaching elite status. This informed the formulation of the aims and the choice of methods for the next stage of the iterative research process (Teddlie & Tashakkori, 2009). Elite youth handball and football players were selected as samples to ensure current descriptions of the influence of players' place of early development. However, as the third study only focused on football, the following section will only describe the findings for elite youth football players.

Aim: The specific objectives were to study 1) the relationship between the probability of becoming an elite youth football or handball player and the population size and density of the player's place of early development, and 2) the relationship between the proximity of a players' place of early development to a talent club and the likelihood of reaching elite youth level.

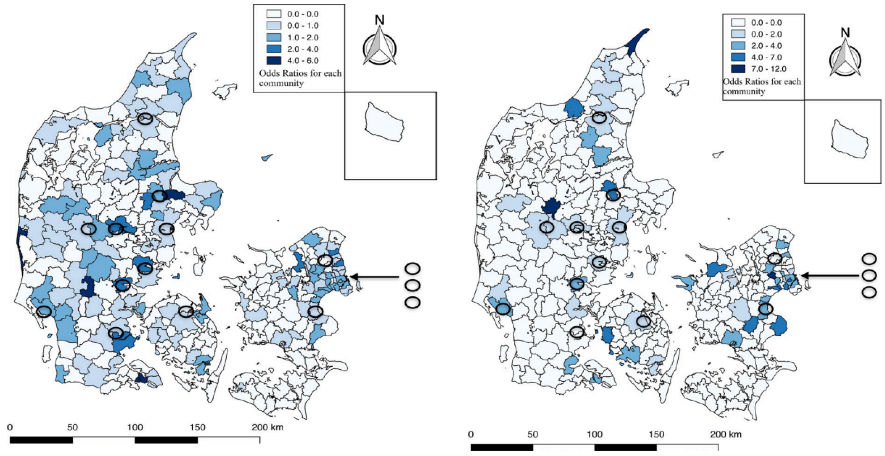
Findings: Table 3 shows the distribution of youth football players in each category of community density and size compared with the proportion of youth elite league and national youth players. The ORs and CIs allow the identification of any over- or an underrepresentation of elite league or national youth players for specified community categories.

	Youth players		Elite U17-U19 players				National youth players			
	No.	%	No.	%	OR	95% CI	No.	%	OR	95% CI
Community size[a]										
≥100	20 878	14.4	120	20.4	1.53	1.25-1.87	22	25.9	2.08	1.34-3.23
50 to <100	20 281	14.0	145	24.7	2.02	1.67-2.44	22	25.9	2.15	1.38-3.34
30 to <50	22 960	15.8	121	20.6	1.38	1.13-1.69	15	17.6	1.14	0.67-1.93
10 to <30	48 898	33.7	142	24.2	0.63	0.52-0.76	23	27.1	0.73	0.47-1.12
<10	32 004	22.1	59	10.1	0.39	0.24-0.65	3	3.5	0.13	0.04-0.40
Community density (pop./km^2)										
≥1000	17 319	16.2	103	17.5	1.57	1.27-1.94	24	28.2	2.90	1.90-4.44
500 to <1000	20 950	16.1	116	19.8	1.46	1.19-1.79	17	20.0	1.48	0.90-2.43
250 to <500	20 461	15.3	119	20.3	1.55	1.27-1.89	17	20.0	1.52	0.93-2.50
100 to <250	29 509	19.2	121	20.6	1.02	0.83-1.24	15	17.6	0.84	0.50-1.42
50 to <100	32 568	20.7	83	14.1	0.57	0.45-0.72	9	10.6	0.41	0.21-0.80
<50	24 214	12.4	45	7.7	0.41	0.31-0.56	3	3.5	0.18	0.06-0.57

[a]Numbers are in 1000s.

Table 3. Odds ratios (OR) and confidence intervals (CI) for being Danish elite U17-19 and national youth players in football and handball in comparison with youth players (census) across community sizes and densities. Reprinted with permission from "Influence of population size, density, and proximity to talent clubs on the likelihood of becoming elite youth athlete" by N. Rossing, D. Stentoft, A. Flattum, J. Côté, D. Karbing, 2018, Scandinavian Journal of Medicine & Science in Sports, 28 (3), p. 1307

The results show that communities with a population size >30,000 and density >250 pop./km2 have an overrepresentation of youth elite league football players, while there is an underrepresentation of youth elite league players in communities with more than 30,000 inhabitants and a density higher than 100 pop./km2. The results also demonstrate that communities larger than 30,000 and those with a density >1000 pop./km2 have an overrepresentation of national youth players, while there is an underrepresentation in communities smaller than <10,000 and those with a density of <100 pop./km2. Consequently, the results show that overall, rural youth players are underrepresented at the elite youth league level and especially at the national youth level.



Figures 2a and 2b illustrate the distribution of elite youth league and national youth football players' place of early development compared with the distribution of youth players in each community. Darker colors indicate higher ORs, while the circles represent the locations of talent clubs. Reprinted with permission from "Influence of population size, density, and proximity to talent clubs on the likelihood of becoming elite youth athlete" by N. Rossing, D. Stentoft, A. Flattum, J. Côté, D. Karbing, 2018, Scandinavian Journal of Medicine & Science in Sports , 28(3), p. 1308-1309

Both Figures 2a and 2b show that communities that house a talent club or are near one have higher proportions of elite youth league and national youth football players than communities located further away from talent clubs. This tendency, however, is more pronounced at the national youth level than at the elite youth league level.

Conclusion: This study supplements previous findings that there seems to be no optimal community size or density for the development of expertise. Moreover, the findings suggest that players' proximity to talent and elite clubs during their early sports development is an important predictor of their likelihood of reaching elite youth level.

5.3 PAPER III

The results from the previous papers and many other studies have shown that certain types of communities that are more likely to develop players that reach the elite or elite youth level. Despite the efforts of previous studies, investigations have yet to identify the underlying mechanisms within players' place of early development that result in the over- and underrepresentation of elite and elite youth players. Since coaches and talent managers hold key positions in athlete development (Bloom, 1985; Coté et al., 1995; Relvas et al., 2010), they have essential insights into the processes that both hinder and promote players' pathways. Therefore, coaches and talent managers are likely to know about the possibilities of and obstacles to players' early developmental pathways.

Aim: The aim of the study was to examine coaches' and talent managers' perceptions of the possibilities and obstacles in youth football players' development pathways, which include the early development phase and the identification of talent from local groups to talent clubs. Since there are differences between handball and football, such as their talent development structures, we decided to focus solely on football in this study.

Method: This study was an exploratory multiple case approach. We purposefully selected 6 participants (6 men aged 19-50 years) who all were experienced coaches or talent managers. Interviews were semi-structured a an interview guide that was based on bioecological theory (Bronfenbrenner & Morris, 2006). A thematic data

analysis was conducted.

Findings: The data analysis revealed two distinct developmental phases into which all the themes could be grouped: the early development phase and the talent identification phase. The findings are provided in a thematic map (see figure 3). The analysis revealed possibilities and obstacles in the players' early development environment that were related to the community, club and team levels.

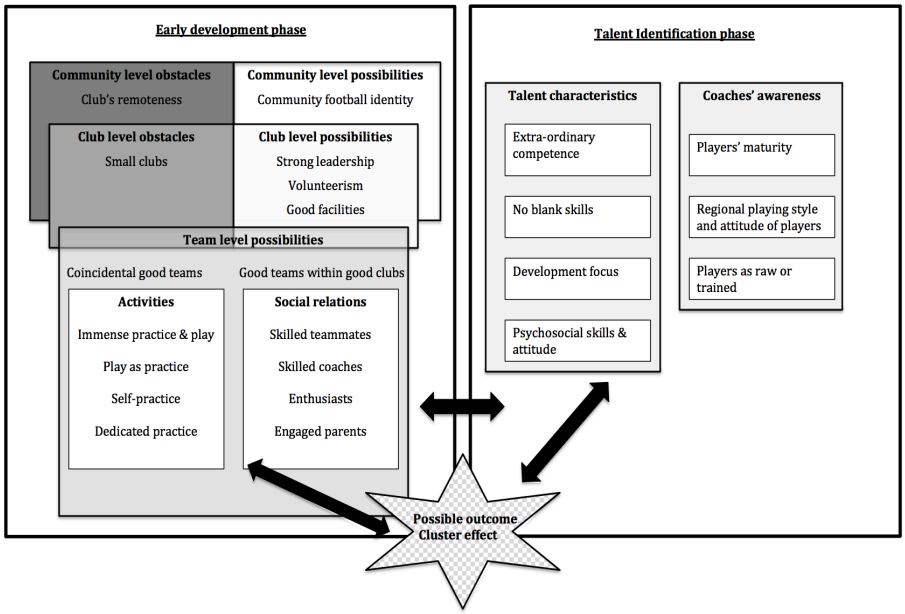


Figure 3: Possibilities and obstacles for football players' early development pathways. Adapted from N. N. Rossing, D. Stentoft & D. S. Karbing. Requirements and barriers in the talent identification and development of youth football players. In review.

A small club size and remote geographical location were perceived by the respondents as obstacles to player development and talent identification. The participants stated that this was due to a lack of training quality since small clubs are often have constrained in terms of human and material resources, such as skilled coaches and

good facilities. At the club level, strong leadership, volunteers and good facilities were perceived as important for the continuous progression of talents at the team level. At the team level, a long range of specific activities, such as dedicated practices and self-practice, but also relationships with coaches, parents and skilled teammates, were perceived as vital for player development.

The findings suggest that there is a link between who coaches perceive as talent players and what they perceived as possibilities within a players' environment. For instance, some of the participants acknowledged an awareness of whether players were raw or trained, but they also described how youth players from remote and small clubs most often have uneven training quality. Thus, the conditions in the early development environment of remote and small clubs may generate unfavorable developmental outcomes for their players.

The participants said they regularly experienced a clustering of talented youth players from the same team within local clubs that normally did not develop talented players. The clustering of talented players suggests that specific possibilities at the team level, such as skilled coaches and teammates, can outweigh other detrimental mechanisms at the club and community levels, such as poor club leadership, lack of community identity and so forth.

Conclusion: This study showed the possibilities and obstacles for players' early development and talent identification stages, as perceived by talent managers and coaches in Danish male youth football.

Overall, the talent managers and coaches suggested that in the early development of

players, possibilities and obstacles occur at three levels: the community, club and team levels. However, when possibilities at the team level are assembled, they seem to able to outweigh obstacles at club and community level.

5.4 SUMMARY OF THE FINDINGS

The present thesis investigated how players' place of early development influences their development of expertise within the context of Danish boy's and men's football and handball.

Across the papers, we learned that no specific community size or community density seems to be optimal for player development across Danish handball and football. However, the findings from the first two papers show that small and less dense communities have an underrepresentation of elite and elite youth players. The findings from both the second and third papers show that players' proximity to talent clubs also appears to influence their likelihood of reaching the elite youth level. However, the third paper shows that good conditions at the team level seem to be able to outweigh unfavorable conditions at community and club levels. However, the analysis also suggests that there is a link between what the participants perceived as possibilities for player development at the local club and team levels and what they perceived as the characteristics of talented youth players.

CHAPTER 6. DISCUSSION

The following chapter discusses the findings of the three papers in relation to previous research. The present project contributes to talent development research in four ways: 1) by exploring and refining our knowledge regarding the role of the *place* of players' early development; 2) by suggesting that aspects at the team level are a primary requirement for development; and 3) by suggesting a link between the possibilities of players' early development environments and how coaches and talent managers perceive players.

6.1 PLAYERS' PLACE OF EARLY DEVELOPMENT RELATES TO THE ORGANIZATION OF THE SPORT

The organization of the sport is more influential than community size or density

Findings from both the first and second studies highlighted that there seems to be no optimal community size or density for the development of elite players across handball and football. Most elite and elite youth football players grow up in medium to larger communities and communities with high population density, whereas elite and elite youth handball players grow up in communities with a medium population density and size. However, a supplementary analysis performed in the first study showed that there was a higher proportion of elite and talent clubs in the community population size and density categories with overrepresentations of elite players. Thus, other parameters, such as players' proximity to talent clubs in their early development, were presumed to be important. Consequently, a geospatial analysis of the elite youth

players was included in the second study. The findings highlighted a tendency in both sports for elite youth players to have grown up in or near communities with talent and elite clubs. Indeed, findings across studies, sports and countries (Finnegan et al., 2017; Pennell et al., 2017; Rossing, Stentoft, Flattum, Côté, & Karbing, 2018) suggest that proximity to talent clubs or national centers of excellence may be a spatial requirement for the development of expertise. This finding complements previous research, since Holt and Sehn (2008) also concluded that the way in which competitive youth sports are organized influences the experience of youth players. This suggests that the population size or density of the communities in which players grow up are highly influenced by the organization of sports. Thus, sports federations, institutions and clubs need to be aware of the potential obstacles to player development that the organization of the sport can present. For instance, community size may be a more appropriate representation of players' early development environment in North America, since communities seem to play a more important role in the organization of sports there than in European countries (Balish & Côté, 2014; Holt, 2002)

Remoteness influences player development

Since the statistical findings from the first two studies suggest that elite and elite youth handball and football players are underrepresented in small and remote communities, it seems that such communities have detrimental conditions for player development at the club and team level. The finding that smaller communities are underrepresented at the elite and elite youth levels seem to be inconsistent with most previous research

as previous studies have found that smaller communities have an overrepresentation of elite and elite youth players (Bruner et al., 2011; Côté et al., 2006; MacDonald, King, Côté, & Abernethy, 2009). However, findings from a recent Canadian study of ice hockey draftees (Wattie et al., 2017) show that the results at the provincial level, besides those for the province of Ontario, are incongruent with previous research at the national level. This suggests that the previously reported community size narrative may not apply to most Canadian regions. Nevertheless, the results of the first study also show that compared with the general youth population, youth players across sports seem to be overrepresented in smaller communities. This seems to be consistent with previous studies (Turnnidge et al., 2014) that suggest that a larger proportion of the youth population participates in sports in smaller communities.

The findings from the third study in this thesis suggest that the remoteness of football players' early development environments is a barrier for the players' development since remoteness often hinders cooperation among local football clubs, opportunities to participate in tournaments, and the development of skilled teammates. Interestingly, a case study from a remote and small but successful community (646 inhabitants) in Lockeport, Canada (Balish & Côté, 2014), illustrated how the community was aware of their need to cooperate with other clubs and therefore regularly invited expert coaches to stimulate their practices. Thus, the case study may show how a small and remote community may use alternative approaches to inspire and educate local youth coaches. Furthermore, the Canadian case study may also indicate that remoteness may be a specific barrier to player development across countries and sports. Since the presence of skilled coaches was also perceived as a

requirement for player development in the third study, it seems necessary to promote the development of local coaches as much as local talents. The findings from the case studies and the third study suggest that national federations, local communities and clubs can consider alternative ways to support remote and small clubs, which could influence the development of players. For instance, since coaches often seem to strive for authentic learning situations (Christensen, 2011), a possible initiative is to bring expert coaches to supervise youth coaches in their local clubs.

Optimal place of early development for players may be sport- or culture-specific

The findings across the studies in this thesis suggest that community-, club- and team-level conditions can promote or hinder player development. Consequently, the findings seem to empirically support the theoretical notion that development environments can be characterized as a nested hierarchal system and that interlinking social "systems" influence different contexts surrounding the developing child (Bronfenbrenner, 1979). Thus, teams embedded in local clubs are also embedded in local communities. However, the presented line of research identified conditions of players' place of early development in a Danish context that seem to vary from the findings of other studies in this area. For instance, case studies from communities in Petersville, New Zealand (Pennell et al., 2017), and Lockeport, Canada (Balish & Côté, 2014), showed the importance of educational institutions such as schools for athlete development. Such institutions were not present in the themes derived in the third study. This may be due to national differences in the organization of sports since sports in Denmark (and Scandinavia) are primarily club-driven (Bjarne Ibsen & Seippel, 2010), while in Anglo-American countries, schools have a larger role in local

sports (Holt, 2002). Consequently, the "optimal" place of early development for players across the community, club and team levels seems to be specific to the national organization of sports.

6.2 TEAM LEVEL ASPECTS ARE PRIMARY FOR DEVELOPMENT

Team level aspects can outweigh club and community obstacles

The findings in the third study show that conditions at the community, club and team levels are related to player development. Nevertheless, at the team level, both good teams within good clubs and coincidentally teams within clubs that normally do not foster talents existed. The participants described how the coincidentally good teams occurred despite detrimental conditions at the club and community levels. Furthermore, both types of teams were characterized by similar activities and relationships. For instance, players' activities, such as dedicated practice, self practice and play as practice, combined with their relationships with skilled teammates, coaches and parents, was perceived to generate fruitful development. Consequently, although findings from the first two studies suggest that small communities and remoteness from a talent club seem to hinder player development in the Danish context, the third paper suggests that conditions at the team levels at local clubs can outweigh possible hindrances at the club and community levels. This finding may explain the variations in certain rural and/or remote communities in the first and second study that are outliers from the national trends. For instance, the results of the second paper show that both smaller and more remotely located communities in

Northern Jutland, the western peninsula, have been able to produce national youth players in football. The findings concerning skilled coaches and engaged parents seem to be consistent with previous sports research that highlights the necessity of passionate coaches (Bloom, 1985; Lafrenière, Jowett, Vallerand, & Carbonneau, 2011) and engaged parents at different development levels (Côté, 1999), even in the early years of athlete development.

Team level activities are primary driving forces for development

The findings showed that a range of activities at the team level, such as dedicated and extensive practice, self practice, and play as practice, combined with relationships with skilled coaches and teammates and engaged parents, was a requirement at the early stage. Combined with recent research regarding the activities of elite youth football players (Ford et al., 2009; Ford & Williams, 2012; Ward et al., 2007), the findings from the third paper seem to support the *early engagement hypothesis* proposed by Ford and colleagues (Ford et al., 2009). The hypothesis suggests that elite football players in their early years both engage in high levels of play and practice in their primary sport domain. From a theoretical point of view, Bronfenbrenner states that "proximal processes are more powerful than those of the environmental contexts in which they occur (Bronfenbrenner & Morris, 2006, p. 804). Indeed, the combination of skilled coaches and teammates and the players' specific football-related activities (proximal processes) may generate powerful enough proximal processes to produce appropriate developmental outcomes at a later stage. Further, the findings from the third study suggest that the conditions at the team level may

result in a coincidental clustering of talents in local clubs that are perceived as disadvantaged. Consequently, the project seems to empirically support the proposed theoretical notion that powerful proximal processes, such as the players' activities, "serve to reduce and act as a buffer against the effects of disadvantaged and disruptive environments" (Bronfenbrenner & Morris, 2006, p. 805). Thus, the findings represent an encouraging outlook for any local club that wishes to develop elite youth players as doing so seems to be possible with the appropriate conditions at the team level.

Compensation strategies may counteract obstacles

Interestingly, case studies from very small, rural and rather remote communities in Petersville, New Zealand (3.987 inhabitants) (Pennell et al., 2017), and Lockeport, Canada (646 inhabitants) (Balish & Côté, 2014), can be viewed as successful communities that were able to overcome the difficulties that small and remote communities face in athlete development. For instance, in both case studies, local coaches seemed to be an essential characteristic of the community and seemed to influence early athlete development to a high degree (Balish & Côté, 2014; Pennell et al., 2017). This is also aligned with the findings of the third study, which show that skilled coaches are a necessity at the team level to encourage early player development. Furthermore, both case studies (Balish & Côté, 2014; Pennell et al., 2017) portrayed how athletes were grouped by various age groups in training and competition. Although the studies did not specifically mention that this grouping was necessary because of the lack of (skilled) teammates, it may well be a community strategy that compensates for the lack of skilled teammates within the same age group.

Therefore, such grouping may be a strategy for ensuring appropriate player development in smaller and more remotely located communities.

Moreover, while the community of Lockeport invited expert coaches to provide inspiration and the latest knowledge in coaching (Balish & Côté, 2014), the community of Petersville involved a local coach who had expert knowledge within the specific sport (Pennell et al., 2017). Thus, the competencies among the coaches in the local communities, combined with desirable activities and fruitful relationships with skilled teammates and parents, as shown in the findings of this project, may primary characteristics for the development of expertise starting at the early development stage. Interestingly, a notable study by Bloom (1982) found that most Olympic swimmers grew up in close proximity to water in warm climates. This circumstance provided early playful experiences with swimming through which the Olympians developed an ease in the water and a special feeling that was an essential characteristic later in their career. In football, early playful experiences may well be the activity, together with interactions with skilled coaches and teammates, that can develop a "special feeling" for the game among the players involved on the pitch.

6.3 PERCEPTION OF TALENT IS LINKED TO PLAYERS' PLACE OF EARLY DEVELOPMENT

Until now, nearly all quantitative and qualitative studies of place of early development have employed samples of elite or talented athletes or successful communities (Baker et al., 2009; Baker et al., 2014; Cobley, 2014; Côté et al., 2006; Lidor et al., 2010; Lidor et al., 2014). Therefore, we have learned that athletes' place of early development influences their likelihood of achieving talent and elite status, and we

have found several noteworthy mechanisms in certain smaller successful communities in Canada (Balish & Côté, 2014) and New Zealand (Pennell et al., 2017) that seem to promote early athletic development. Consequently, it seems that most studies have *assumed* that the place-of-early-development effect is mainly due to different conditions within the early development environment (Schorer et al., 2010). Thus, by including cross-sectional samples in their investigation of German female and male regional and national youth handball players, Schorer and colleagues (2010) aimed to investigate differences in place of early development and motivation between the selected and non-selected players. However, the findings showed no differences in the size of the community or achievement motivation between the two levels of samples. Nevertheless, the authors noted that the findings were restricted since the regional and national youth player groups may have been too similar. In contrast to these findings, the second study found significant differences between the samples of elite youth league and national youth players. For instance, the results showed that elite youth football players growing up in remotely located communities are some extent being recruited to elite youth leagues but generally have great difficulty reaching the national youth level. Although the results of the second study show differences between the two selected samples, they do not explain how the players' place of early development and the talent identification process are related. However, the findings from the third study may shed light on these differences. For instance, both remotely located and smaller clubs were perceived by the participants as unfavorable for the development of players. This suggests that different conditions in the early development environment generate varied developmental outcomes

among the players that provide benefits or disadvantages in the identification phase. One example from the third study was the participants' judgment of youth players as raw or trained and their descriptions of how youth players from remote and small clubs often have unfavorable training qualities, among other disadvantages. Consequently, youth players from remote and small clubs have difficulty attaining the competencies that seem vital to being recognized as talented by talent managers and coaches. Consequently, national federations should both improve the conditions among local clubs, including small and remote clubs, and ensure a critical awareness among talent coaches of the differences between raw and trained players. Since raw players seem to have a lack of training quantity and/or quality, the power law of practice (Ericsson et al., 2007) suggests that their performance may improve rapidly during the early stages of experience in a specific domain. These findings suggest that the talent identification stage may benefit from a more longitudinal process in which the youth players can be judged not only on their current performances but also on their current improvements. This praxis may ensure that the talent managers and coaches are better able to "disambiguate the present and the future potential skill level (or "talent") of an individual" (Mann, Dehghansai, & Baker, 2017, p. 4) and that youth players from local clubs with certain obstacles have better opportunities to reach the elite level.

CHAPTER 7.
CONCLUSION & PERSPECTIVES

7.1 CONCLUSION

This thesis aimed to examine how Danish handball and football players' place of early development influences their development of expertise.

Players' place of early development seems to be comprised of aspects at the community, club and team levels. Findings across studies show that neither a specific community population size or community density seems to be optimal for player development across Danish handball and football. However, statistical findings showed that elite and elite youth players in both handball and football were underrepresented in smaller and less dense communities. Further, a geospatial analysis showed that players' proximity to talent clubs influenced their likelihood of reaching elite youth level. Thus, growing up near talent clubs is favorable to players' development. Moreover, findings from interviews with both coaches and talent managers, show that the size and remoteness' of local clubs also play an important role in football players' place of early development. At the club level, strong leadership, volunteers and good facilities were perceived as aspects that contributed to consecutive good teams in football. However, talented players came from both good teams within good clubs and coincidentally good teams in other clubs. Thus, the conditions at the team level seem to be able to overcome unfavorable conditions at the community and club levels. Additionally, the findings suggest a link between the

conditions of football players' early development environments and how coaches and talent managers perceive the players.

7.2 APPLIED PERSPECTIVES

The findings of this thesis show that aspects at the community, club and team level all influence player development. Therefore, applied perspectives directed toward different organizational levels are suggested below to help optimize the club, team and coach level conditions for youth players.

Club level perspectives

First, the findings from the third study showed that strong leadership and volunteers were important human resources among the local football clubs that continuously developed talented football players. Since previous research on volunteering has shown that management within sport organizations influences the organizations' ability to recruit volunteers (Enjolras & Seippel, 2001; Ibsen, 1992), national federations ought to focus on supporting leaders at local clubs. The support of leaders may ensure better working conditions, which can attract and prolong the engagement of local coaches, volunteers and enthusiasts, and thereby ultimately assure better conditions for the long-term continuous development of talented youth players.

Team level perpectives – education of local coaches

In combination with previous research (Balish & Côté, 2014; Pennell et al., 2017), the findings of this thesis shows that players' activities and their relationships with skilled coaches and teammates, among others, are crucial for player development.

Previous studies have also emphasized the importance of skilled coaches for player development (Bloom, 1982; Cote et al., 2007). Since most local clubs rely on voluntary coaches, at least in the Scandinavian context (Ibsen & Seippel, 2010), it may be beneficial to embrace alternative education methods other than formal education networks. It therefore seems reasonable to suggest that national federations and local clubs need to invest in the recruitment and education of local coaches. For instance, Christensen (2011) found that professional Danish national youth team coaches learned by participating in joint study tours and meetings with other coaches and experts and by entering networks with other coaches who can serve as role models, supervisors and mentors. The findings of this thesis suggest that coaches from remotely located and small local clubs in particular operate in systems with a lack of coaching role models and opportunities to cooperate with other coaches. Therefore, by establishing local coaching network systems, the national federations could inspire local club coaches to develop their potential as coaches and thereby ensure excellence in their dedicated practices.

Team level – the power of talent coaches

Combined with previous research (Christensen, 2009; Csikszentmihalyi, Rathunde & Whalen, 1993; Tranckle & Cushion, 2006), the findings of this thesis add to the belief that talents are constructed through powerful relationships. Especially in a team sporting context, such as handball and football, players must be perceived (and therefore constructed) as talented during the vital identification stages in their development (Reilly et al., 2000). Since coaches' subjective judgment is highly influential in the development and identification stages (Christensen, 2009: Tranckle

& Cushion, 2006), they have the power to promote the developmental pathways of players that they value and obstruct the developmental pathways of other players. This is aligned with the notions of Csikszentmihaly and colleagues (1993), from whom we have learned that talent can be regarded as somewhat negotiated in relationships and therefore a social construction: "It is a label of approval we place on traits that have a positive value in the particular context in which we live" (Csikszentmihalyi et al., 1993, p. 23). Further, Aruajo and Davids argue that a talented individual requires more than the right abilities. "What makes one individual's behavior more talented than another's is not some possessed ability, but its contextualized functional value: its usefulness in particular performance contexts" (Araújo & Davids, 2009, p. 24). From a theoretical developmental perspective, it is also a fundamental premise of the bioecological model of Bronfenbrenner that people develop through interactions with other people in activity settings (Bronfenbrenner & Morris, 1998). In line with the findings of the third study, a study on Danish national youth coaches' perceptions of talent showed that coaches judged both attitudes and skills on and off the field (Christensen, 2009). For instance, the participants in the third study valued psychosocial skills and attitudes such as humbleness as characteristics. Further, a Swedish interview study (Lund & Söderström, 2017) with talent coaches concluded that the coaches were influenced by their experience but also the specific regional culture in which they were embedded. The findings of the third study also showed that players had a regional playing style. This suggests that the talent identification process differ according to the players' and coaches' region.

The perspective of youth players as embedded in a powerful relationship with coaches, especially talent coaches, has implications for the applied perspectives. It seems warranted for talent coaches to become more aware of their assumptions regarding talent and how these assumptions influence the development and identification of talents.

7.3 FUTURE RESEARCH:

Overall, since this thesis indicates that the organization of sports influences players' place of early development, it seems necessary to determine the role of players' place of early development in different sports to ensure an appropriate description and understanding of the phenomenon. Thus, future studies should both undertake quantitative and qualitative explorations of the role of players' place of early development.

Need for explorative quantitative studies

Several studies have used OR and similar methods to determine the community population size (Bruner et al., 2011; Côté et al., 2006) and density (Hancock et al., 2017; Rossing, Nielsen, Elbe, & Karbing, 2016) that seem to be best for athlete development. However, the use of ORs also results in a de-contextualization of the data since each community is grouped into a category with other communities of the same population size or density. The community population size and density can provide an important grouping method, but there are several confounding variables within such categorizations. For instance, the accessibility of sport facilities (Carlson,

1988), community sports identity (Balish & Côté, 2014) and differences in talent development structures have been found to be important mechanisms that contribute to athlete development. As shown in the findings related to proximity to talent clubs, researchers (Connell & Connell, 2015; Woolcock & Burke, 2013) have proposed that spatial analysis can derive relevant findings related to athlete development for both researchers and practitioners. Therefore, future studies should further explore spatial aspects related to athlete development as doing so may broaden our understanding of the role of players' place of early development. However, it may be beneficial to integrate statistical findings with spatial findings to statistically verify the patterns. For instance, future studies of proximity to talent clubs could combine a spatial analysis of certain players from communities near talent and elite clubs and a statistical analysis of the actual distances from the players' early development environments to talent and elite clubs. Consequently, the spatial analysis will offer a visual representation of the data (Brewer, 2006), while the statistical analysis can offer a more precise account of the influence of players' actual proximity to talent clubs.

Need for qualitative studies

This thesis has provided knowledge of specific conditions that promote or constrain football players' development at the early stage. However, since the findings of this thesis also suggest that the sports organization is important, we should be cautious about generalizing the findings to other sports and, in particular, to countries with other types of sports organizations. Thus, studies that explore the aspects that are important to early player development in different sports contexts seem warranted. For instance, the exploration of the possibilities and obstacles in Danish handball

players' early development may provide further understanding of the role of players' place of early development in a Danish context as the findings may show both the general and sport-specific possibilities for player development.

Furthermore, ethnographic studies that explore players' early development pathways may offer the unique benefit of allowing the researcher to participate in both observation and dialogue as the events unfold. This may allow the researcher to describe the various activities and interpersonal dynamics that occur on a daily basis within local clubs using their own and the participants' *senses* (Sparkes, 2009). This may add to the description of the possibilities and obstacles to player development, since using our senses has been proposed to improve "our understanding of the life world of others and our own locations in relation to these" (Sparkes, 2009, p. 26). Moreover, this method also provides the opportunity to obtain youth players' and parents' perceptions of the possibilities needed to support players' development. Therefore, this type of study seems to be specifically warranted.

The Danish national football federation has currently started initiatives with the overall aim of improving player development, with a specific focus on ensuring better development opportunities for players from smaller and more remote clubs (Larsen, 2017). Indeed, these initiatives may be practical solutions to the problems recognized within this thesis. However, while such initiatives may transform players' development level, they also create unintended consequences. Consequently, such initiatives can be investigated as an experiment of nature (Bronfenbrenner, 1979), which Bronfenbrenner and Crouter (1983) defined as a situation in which changes occur naturally (without researchers as the initiators). Studies that have the

opportunity to explore such initiatives add to our understanding of players' place of early development, as an excellent way to understand a phenomenon is to change it (Bronfenbrenner, 1979).

CHAPTER 8. LITERATURE LIST

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APPENDIX 1: REGISTRATION SHEET FOR ELITE AND ELITE YOUTH CLUBS

Club:

Note that place of early development is understood as the town in which or nearest which the players primarily lived for their first 12 years.

Name	Place of early development	Birthdate

APPENDIX 2: INTERVIEWGUIDE FOR TALENT MANAGERS

Interviewers background & Introduction	Please tell me shortly about yourself and your role. How long have you been in the club? - How did you start in the club? - What is your role and tasks in the club? - When are you successful and non-successful in the club?
Context	What kind of collaboration do you have with your co-working clubs? What are the intention and the concrete collaboration? What are the decisive characteristics of a good talent development club in the local clubs?
Micro-meso-exo level	What characterises the environments (and/or clubs), which your club often recruit youth players from? - Facilities? - Elite senior level? - History as talent developer? - Coaches? - Parents? - Education/school? - Local environment? - Organisation of the club? When are you satisfied with a co-working club? What characterises the environments or clubs that you seldom or never recruit from? What ressources og barrierers do you see in the environments among the coworking clubs? - How does this affect the development of the youth players? What mechanisms in the environments seem to be most relevant for the development processes of the young players? Which importance have the distance to the TDE when the the youth players have started to train with you? - And what do you do to adjust to that?
Macro-environment	How does other organisations support or disadvantage your talent development? E.g.: - Other club rivals? - National sport federation? - Municipalities? - Others? What characteristics of youth players do the national sport federation and the youth national teams prefer when they select youth players? - And what implications do this have for your work? Do you experience any national and regional differences between ways to look at the talented youth players? If yes, which?

Process	What characterises the activities, which good co-working clubs do? Which relation have the selected youth players had with their local club coach? Which relation have the youth league coach had with their selected youth players?
Person **- individual development** ***Developmentally generative*** ***Developmentally disruptive***	What considerations do you do when you recruit youth players? If you are to describe the youth player, which you would prefer to select, what characterises him as a youth player? What differences are there on youth players you select and de-select? Do the selected youth players have any partciluar competencies? If yes, which? How would you describe the selected youth players in relation to: - Sport-specific skills? - Attitude towards training and competition? - Skills outside training? How would you describe the non-selected youth players in relation to: - sport-specific skills? - attitude towards training and competition? Skills outside training?
Time	Which developmental process characterises the youth players selected by your club? When do the clubs start to be serious and goal-oriented in their youth player development? Which future challenges do you find at your club and your coworking club? What can be done to make it more successful?
Results from our research	What mechanisms do you think is the primary reasons for our results in study 2 and 3?

ISSN (online): 2246-1302
ISBN (online): 978-87-7210-171-2

AALBORG UNIVERSITY PRESS