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Lukas Linnér has a Master of Science in Sport Psychology. This is his doctoral thesis in the field of Health and Lifestyle specialized in Sport Psychology, completed at the School of Health and Welfare at Halmstad University.

The European Union has called upon member states to develop a support throughout athletes’ dual careers. Dual careers (i.e., the combination of sport and study) has been facilitated in Sweden at the upper secondary level since the 1970s. In 2015, Swedish sports universities were introduced. This thesis explores Swedish university student-athletes’ dual career experiences from the holistic developmental and ecological approaches. A synthesis of approaches and findings are made, and a dual career assistance framework is presented to guide a professional practice.

Dual Careers of Swedish University Student-Athletes: A Synthesis of Holistic Developmental and Ecological Approaches

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To all the student-athletes and support providers out there. May this work help you.
Abstract


The Swedish dual career (DC) system has a history of providing support at the gymnasium/upper secondary level since the early 1970s. Since 2012, there has been a call from the European Union to member states to develop a support provision throughout athletes’ DCs based on national research. In 2015, the Swedish DC system was expanded to include the university level. Completed in parallel with this development, the aim of this PhD Project has been to study the DC experiences of Swedish university student-athletes from the holistic developmental and the holistic ecological approaches, and to develop a framework for DC support at university level in Sweden. The dissertation is designed as a collection of four studies, with one article per study.

In Study I (part of the Erasmus+ project Gold in Education and Elite Sport; GEES) Swedish university student-athletes’ personal resources and coping strategies, known also as DC competences, are explored in relation to challenging DC scenarios (e.g., Miss days of study). Findings for example showed a general need to develop competences to cope successfully with the DC.

In Study II the move from exploring demands across student-athletes’ levels of development to integration of demands in DC scenarios, as initiated in the GEES-project, was continued. Semi-structured interviews were conducted with six student-athletes with the aim to identify DC scenarios that influenced university student-athletes’ DC balance and factors involved in the coping process. Seven scenarios were identified. An updated definition of DC scenarios and their taxonomy was suggested.

Study III (part of the Erasmus+ project Ecology of Dual Career) shifted the attention from the individual to the environment and explored the features of a successful DC development environment (DCDE) at a Swedish university from the holistic ecological approach. The structure and key relationships in the DCDE, for example, coach-to-student-athlete, and the factors influencing the DCDE effectiveness, for example, a DC-support team with a shared DC philosophy, were described.

Study IV combined the holistic ecological and holistic developmental approaches through a mixed-methods case study to describe how a DCDE at a Scandinavian university facilitated their student-athletes’ DC transition. The findings suggested that effective DCDEs work to meet student-athletes’ needs by helping them to develop DC competences to create and maintain an optimal DC balance.

This PhD Project contributes to the DC research and assistance within the athlete career sport psychology discourse and to the knowledge basis for the continued development of the Swedish DC system. Derived from Studies I-IV and related research, the DC assistance (DCA) framework is presented integrating whole person, whole career, and whole environment perspectives. The DCA framework is aimed at guiding professional DC practice towards helping student-athletes develop and maintain optimal DC balance to facilitate their striving for career excellence, and by means contribute to more sustainable DCs for student-athletes across Swedish sports universities.

Keywords: dual career, student-athlete, university, holistic developmental approach, holistic ecological approach, and dual career assistance.
Sammanfattning


I studie I (del av Erasmus+ projektet ”Gold in Education and Elite Sport”; GEES) utforskas elitidrottande högskolestudenters personliga resurser och copingstrategier, även kända som DK-kompetenser, i relation till utmanande DK-scenarier (t ex. missa viktiga dagar i skolan). Resultaten visade till exempel att elitidrottande studenter upplevde ett allmänt behov av att utveckla DK-kompetenser för att framgångsrikt hantera sin dubbla karriär.


Studie III (del av Erasmus+ projektet ”Ecology of Dual Career”) skiftar fokus från individen till utvecklingsmiljön och undersöker egenskaper i en framgångsrik utvecklingsmiljö för dubbla karriärer vid ett svenskt lärosäte utifrån ett holistiskt ekologiskt perspektiv. Utvecklingsmiljön beskrivs utifrån dess struktur och nyckelrelationer (t ex. tränare-till-elitidrottande student) samt faktorer som bidrar till miljöns effektivitet (t ex. ett DK-stödteam som delar en filosofi om hur de ger stöd).


Nyckelord: dubbel karriär, elitidrottsande student, universitet, holistiskt utvecklingsperspektiv, holistiskt ekologiskt perspektiv, stödmodell.
List of Scientific Articles

This thesis is based on the following studies, referred to in the text by their Roman numerals.


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## Abbreviations

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<th>Abbreviation</th>
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<tr>
<td>DC</td>
<td>Dual career</td>
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<td>DCA</td>
<td>Dual career assistance</td>
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<td>DCDE</td>
<td>Dual career development environment</td>
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<td>DC-ESF</td>
<td>Dual career environment success factor</td>
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<tr>
<td>DCSP</td>
<td>Dual career support provider</td>
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<tr>
<td>ECO-DC</td>
<td>Ecology of dual career (Erasmus+ sport project)</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>EVL</td>
<td>Elite sports-friendly university (Swe: Elitidrottsvänligt lärosäte)</td>
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<tr>
<td>GEES</td>
<td>Gold in education and elite sport (Erasmus+ sport project)</td>
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<tr>
<td>HEA</td>
<td>Holistic ecological approach</td>
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<tr>
<td>RIU</td>
<td>National sports university (Swe: Riksidrottsuniversitet)</td>
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</table>
Key Terms

The following terms are used consistently throughout the thesis.

- **Athletic career**: Is (a) a multiyear competitive sport involvement voluntarily chosen by an athlete and aimed at achieving a personal peak in athletic performance in one or several sport events (Alfermann & Stambulova, 2007), (b) a sequence of career stages and transitions (Wylleman et al., 2004), and (c) a part of, and contribution to, a person’s life career, expanding the meaning of athletes’ experiences from doing sports for the sake of sports to doing sports for the sake of sports and life-long development (Stambulova & Wylleman, 2014).

- **Career transition**: A turning phase in career development involving coping with a set of demands leading to successful or less successful outcomes and related changes in an individual’s career trajectory (Stambulova et al., 2021).

- **Dual career (DC)**: A career with major foci on sport and studies or work (Stambulova & Wylleman, 2015). In this PhD Project, dual career consistently refers to sport and study, not work.

- **Dual career balance**: A combination of sport and study that help student-athletes achieve their educational and athletic goals, live satisfying private lives and maintain their health and wellbeing (Stambulova et al., 2015).

- **Dual career development environment (DCDE)**: Purposefully developed systems that aim to facilitate athletes’ investment in combining their competitive sporting careers with education or work (Morris et al., 2021).

- **Dual career support provider**: A professional consultant related to an educational institution and/or an elite sport organization – or certified by one of those – that provides support to elite athletes in view of optimizing their dual career (Wylleman et al., 2017).

- **Health**: A state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity (World Health Organization [WHO], 2020).

- **Lifestyle**: A sociocultural phenomenon in which patterns of behavior interact with the situational context to create a lifestyle that is a way of living, which is partly different/unique and partly similar with the people around (Dean et al., 1995). From a commonsense view, a DC lifestyle is the way in which student-athletes live their everyday life, which is determined by personal preferences and environmental influences.

- **Mental health**: A state of wellbeing in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community (WHO, 2018, March 30). Mental health is an essential part of health, and mental health is a resource, or poor mental health a barrier, for development and performance (Henriksen, Schinke et al., 2020).

- **Student-athlete**: An athlete recognized by an elite sports organization, competing at minimum national level, and registered as a student in an educational institution (Wylleman et al., 2017).
Author Background and Motivation

I would like to start this thesis with a description of my background and motivation for pursuing a PhD Project about athletes’ DCs. If to get to know me and my history ending up pursuing this, two major themes and how they have been intertwined can be highlighted. The first is my interest into and experience of the culinary world and cooking, and the other is my interest into and experience of sports. I initiated my athletic career as many kids in Sweden do by playing soccer, having my first contact with sports at the age of three. After years of sampling different sports in parallel with soccer, I turned my main attention from soccer to golf at the age of 11, by becoming a member in Allerum Golf Club. The club was located just outside the city of Helsingborg in the South of Sweden, where I was born in 1985. Golf became the sport that I enjoyed the most and it followed me throughout, and in many ways defined my, adolescence. Through golf I went abroad and away from my parents and family for the first time when taking a “language course abroad” in Scotland, the home of golf. After some initial success and recognition, professional golf became a dream. The path towards such a dream lied in college golf in the United States, or at least so I thought.

After nine years of compulsory school and at age 15, I was confronted with the decision to choose what education to take in upper secondary school. Going to a sports gymnasium specialized in golf was interesting but beyond my reach. Through friends I learned about culinary school, and that one could become a chef, which captured my attention. A few years later and with some coincidence and a lot of hard work, I was working as a chef in one of the best restaurants in my hometown, at that time rated top ten in the country. The world of fine dining and the creative nature of making desserts and pastries opened and I initiated the first phase of my working career in life.

Throughout upper secondary school (age 16-18) I combined my pursuits in golf with my education and development as a chef. I had a dual career, although never having heard of such a thing. After secondary school I combined golf with working life as a chef for one year, still working towards the dream. The following year I was admitted to Johnson & Wales University in Miami, Florida. A dream come true.

Departing to the US marked the step towards adulthood as it, beyond a cultural transition, also involved moving away from my parental home. I remember realizing this halfway across the world, staring into the mirror in the plane bathroom thinking ‘what am I doing?’. I spent only one year in the US, but it left a remaining impact on me as a person and my perspectives on the world. My social network at the University and golf-team spanned more than 15 different nations. The multi-national experience gave me a profound feeling that we are not so different, and the world is not that big after all. The year also taught me some tough lessons. For one, my ability to play golf, although at a high level, was not enough in comparison to many others. The dream of professional golf was far away. Now, let’s pause here and clarify that at this point I was 20 years old and thought that golf was pretty much everything and if I made it to college in the US the path towards professional golf was, if not fully so at least partially, paved. The person writing this today is shaking his head, but it’s the true story. My plan did not extend much further, and what mattered was golf and not so much anything else. Thinking back at this I am astonished by how this was my perspective, and how I lacked a more sound, holistic, and developmental perspective. In fact, in golf the average age for making it to the highest level is closer to 30 than 20. With a different perspective, who knows, maybe I would have continued the pursuit. The reality was that after one year in the US, I was disappointed with the education, and although having scholarships the financial investment was too high, given that I did not believe in the dream anymore. So, I discontinued my athletic career.

Coming back home, I transitioned back to being a chef, gained working experience in several countries ending up in Stockholm (Sweden) as head pastry chef at a fine dining restaurant. A couple of years
later I was dissatisfied with the stressful working life and unhealthy lifestyle of being a chef. Having always had an interest in the mental side of sports, and with the help of my brother, I found my way back to sports by initiating a bachelor education in Sports Science, with a major in Sport Psychology, at Halmstad University.

After three years, and by using credits taken in the US, I managed to finalize my bachelor and master diploma while also gaining additional experience through the European Masters Erasmus Program in Sport and Exercise Psychology and followed this with a one-year Applied Sport Psychology education. Throughout this process it was my privilege to have Professor Natalia Stambulova as my main supervisor. At this point I was still however mainly caught up with the performance side of sports and devoted my efforts of research and practice into self-talk and golf performance. I am very thankful that Natalia never gave up her hopes on me widening my horizons, and how she inspired me to progressed and incorporate a developmental perspective into my professional philosophy. In parallel with the applied education I initiated my second phase of working life as a lecturer at Halmstad University at age 26. Soon thereafter, Natalia invited me to take part in the first DC project in Sweden; Becoming a winner in the long-run – National elite sports-gymnasium students’ experiences of DCs during their first educational year (see more in appendix C). The project and findings resonated with many of my personal DC experiences which stimulated my interest into the field. The project turned out to be a steppingstone for development of DC research and practice in Sweden, and for the collaboration between Halmstad University and the Swedish Sports Confederation on athletes’ DCs. After a few years of lecturing and administration as Head of the Sport Science Program at Halmstad University a PhD position was announced, and the rest is history in the making.

My head coach in the US, Dave Adamonis Sr., may he rest in peace, had a saying to us youngsters aiming for golf success. PPO! Patience pays off. Meaning roughly that the ones who stick to it and continues for several years despite adversity, can be rewarded. This saying has stayed with me in life. I have learned that things do not always become what you expected them to, but sometimes just working hard, being patient, and staying along for the ride takes you places you did not even think of from the beginning. Beginning this PhD Project, I could not imagine what would follow. In appendix C the related projects and collaborations that I have been privileged to be a part of alongside this PhD Project are outlined. They include, for example, Erasmus+ sport projects with DC researchers and practitioners across European countries within the Gold in Education and Elite Sport (GEES) and the Ecology of Dual Career (ECO-DC) projects. They also include national collaborations with stakeholders across Swedish sports universities (i.e., RIUs/EVLs) and national sports federations, policy developments through the Swedish National Guidelines for elite athletes’ DCs (henceforth: the Swedish DC guidelines; Swedish Sports Confederation, 2018a), and an ongoing project about monitoring the DC experiences of student-athletes across Swedish sports universities for the continued development and improvement of support provision across the country. All projects and collaborations have in some way or another impacted and improved this PhD Project. I am very grateful to everyone involved, and to the project coordinators for having me onboard. What a ride it’s been.
Introduction

In a popular Swedish TV show four retired Swedish sport legends were sitting around a table, discussing their athletic career termination and post-athletic career experiences (Gårdinger, 2016). Collectively they hold 58 gold medals across two Olympic game and 27 National, 14 European, and 15 World championships, as well as two Stanley cup victories, and experiences from 11 Olympic Games. This is their discussion:

Peter Forsberg asks Jörgen Persson if he practices or plays anymore or if he has completely withdrawn from table tennis and sleeps in in the morning? Jörgen: Well no, I have not completely withdrawn, I practice with the guys some (everyone smiles). I mean, sometimes I only go to the guys, I don’t practice then, I just come around, with my bag. I only want the feeling you know, it’s hard [to quit]. Caroline Ek explained that she always had a full-time job and that she alongside her kickboxing career went through education to become a firefighter and says that nowadays there is much more time to fill than before, but this feels fine. Niklas Jihde continued saying: My dream has always been to become a TV host and I felt that I could not be the elite floorball player-Niklas and a host at the same time, so I said quite early back then that this will be my last year. Peter, nowadays working as a businessman said: I thought I would take it easy after my career, but it didn’t work. Caroline: Was it the emptiness? Peter: I don’t know. I just can’t get up in the morning without having something to do. As soon as I was done with ice hockey, I started a one-year education in economy and leadership, it felt nice going back to school. Jörgen reflected upon the shared information: If you have prepared and put yourself into what else it is you want to do, like you, you wanted to be a host, and you had something alongside and might know that yes, this is what I want to do.

In summarizing the 1968-2010 athletic career termination research Park et al. (2013) concluded that 15.6 percent of athletes experienced adjustment difficulties or problems with their post-athletic career adaptation. Other studies suggest up to 20 percent of athletes experience problems with athletic retirement (e.g., Gouttebarge et al., 2017; Stambulova, 2017). Failure to cope with athletic career termination (and transitions during the athletic career) is regarded as one of the main concerns of athletes’ mental health and wellbeing (Schinke et al., 2018). The transition to the post-athletic life implies physical, social, and professional adaptation as well as an identity change (Alfermann & Stambulova, 2007; Stambulova et al., 2007; Stråhlman, 1997; 2006). Failure to find a new place in life after the athletic career, for example at the workplace, can result in a crisis accompanied by frustration, depression, and other forms of deteriorated well-being. Athletic retirement research (Park et al., 2013) has shown (among others) that educational background and balancing academic and athletic activities during the athletic career is positively related to post-athletic career adaptation. Athletes are therefore encouraged to prepare in advance by means of retirement planning, life skills training, self-explorations beyond sports, and combining sport with studies and/or work.

The term “dual career” (DC; Stambulova & Wylleman, 2015) was first introduced in 2007 in the White Paper on Sports (European Commission, 2007) stating:

In order to ensure the reintegration of professional sportspersons into the labour market at the end of their sporting careers, the Commission emphasises the importance of taking into account at an early stage the need to provide “dual career” training for young sportsmen and sportswomen and to provide high quality local training centres to safeguard their moral, educational and professional interests (p.6).
In following this, DCs has been a subject in Europe in which researchers, practitioners and policy makers have been communicating and building a discourse (see Guidotti et al., 2015, and Stambulova & Wylliman, 2019). In 2012 the European Commission highlighted the challenge of combining sports, studies, and a personal life by issuing the EU guidelines on athletes’ DCs (European Commission, 2012) marking an important step in the development of support provision for student-athletes across Europe. Within the EU guidelines, DC was defined as the process “for athletes to successfully initiate, develop and finalize an elite sporting career as part of a lifelong career, in combination with the pursuit of education and/or work” (European Commission, 2012, p. 6). The EU guidelines aimed to inspire member states to develop national DC guidelines enforced by national research, to move beyond support based on “the goodwill of persons in key positions of an organisation… [and develop] a systematic approach based on general and sustainable financial and legal arrangements” (p. 4), to safeguard the development of athletes, facilitate balance between sports training and education, and improve athletes post-athletic career adaptation. Following the EU guidelines, the European Commission has prioritized DC as one of the main funding topics within the Erasmus+ sport program. DC research has since flourished (Stambulova et al., 2021) in line with the aims of promoting healthier and more fulfilling careers for student-athletes in sport and life, enhancing their coping resources, harmonizing their self-identities, balancing their lifestyles, and optimizing their supporting contexts. Additionally, DC research and practice serve to prevent negative developmental and health-related consequences of not coping with sport and/or life related crises, and by means optimizing student-athletes’ health and wellbeing. Consequently, DC research and practice is in line with the 2030 Agenda for sustainable development (United Nations, 2015), including working to ensure student-athletes’ health and wellbeing (Goal 3: Healthy lives and wellbeing for all), access to education, (Goal 4: Ensure education and lifelong learning for all), and reduce the proportion of youth not in employment, education or professional training (Goal 8: Promote economic growth and employment for all). The increased attention to athletes’ DCs in society in general can be seen, for example, in the International Olympic Committees’ inclusion of DCs into their Athlete365 Career+ program (together with Adecco) aimed at empowering Olympic athletes worldwide towards maximized education and employment opportunities (IOC, n.d.).

The Development and Current Status of the Swedish DC System

In 1969, the Swedish state investigation "Sports for All" (Idrottsutredningen, 1969) highlighted the need for athletes to combine elite sports with education and/or work, based on early career research in Sweden targeting athletes’ post-athletic career adaptation (Halléen, 1963). The sports investigation concluded that “general measures to ‘solve’ the problem of sports-studies do not exist” (p. 109) and called for actions by the Swedish Sports Confederation. Following the state investigation, and to support the combination of elite sports and upper secondary education, two national elite sports gymnasiuums (RIGs) were initiated in 1972 to support adolescent student-athletes (aged 16-18). As sports in Sweden is club based, the initiation of sport gymnasiuums alongside the club system marked a shift in the organizational support of elite sports. In 1977, the secondary education subject of “Specialization in sports” was approved by the Swedish National Agency for Education and introduced in the student-athletes curriculum. Today, the central aim of “Specialization in sports” is teaching student-athletes to train and compete in their sports to reach international competitive level, alongside following an educational program of their choice. The upper secondary DC system in Sweden is reinforced by a sports politics for the 21st century in which it was stated that:

The basic idea in the Swedish model is that elite athletes should be able to proceed with a normal life in society once their sporting careers are over. It is therefore a national interest that young elite athlete youths are provided with opportunities to combine education and sports during the upper secondary education years (Swedish Government Bill, Prop. 1998/99:107; translation by author).

In Sweden, the sports movement and society share a common responsibility for supporting elite athletes’ career ambitions in combination with studies, and the system rests on strong cooperation between
the Swedish Sports Confederation, national sports federations, and local authorities running the upper secondary schools and employing coaches with teacher education to provide both theory and practice for adolescent student-athletes. The belief in the Swedish DC system has been summarized as a philosophy of creating “winners in the short and long run”. The long run refers to student-athletes future and following athletic career termination as ‘winners’ feeling well prepared for life after sports. Student-athletes are short run winners when they cope with the demands of their current DC lifestyle and continue the DC pathway (Lindahl et al., 2011; Stambulova et al., 2015; Swedish Sports Confederation, 2018a).

The DC system has since its initiation been evaluated and developed several times alongside the changes of Swedish secondary education and the conditions of Swedish sports (Eriksson, 2007; Skolverket, 2018, for a review). Today it is a nation-wide system with two levels; the national elite sports gymnasiums (RIGs) with nation-wide admissions, and since 2011 the local/regional option with the nationally approved sports programs (NIUs). Currently (2019/2020 study year), the system involves 51 RIGs with 1201 student-athletes and 483 NIUs with more than 10,000 student-athletes (Swedish Sports Confederation, 2020). In 2020 the Swedish Ministry of Education released a memorandum for a revised elite sports gymnasion system (Ministry of Education, 2020). Among the changes suggested was having a unified one-level system by removing the NIU-option and expanding the former RIG-option to include around 6,000 student-athletes. If or when the system is changed is currently unknown.

The Swedish sports and educational systems have a long history of cooperating on upper secondary education level, but a nationally organized system of support for student-athletes at university level was for a long time overlooked. In 2011 the Swedish university sports federation suggested to the Swedish Sports Congress to develop sports universities (SAIF, 2011). A working group consisting of representatives from the Swedish Sport Confederation, SISU sports education, several sports federations, five universities, and one district sports federation was appointed to develop a national model for sports universities. In 2013 the Swedish Sports Congress decided to proceed and start a two-level system of Swedish sports universities. In 2015 the first national sports universities (RIUs) and elite sports-friendly universities (EVLS) were appointed for the 2015–2018 period. In 2018 universities were again re-appointed, some with new status, for the 2018–2022 period (Swedish Sports Confederation, 2018a). The system currently holds eight universities as RIUs and twelve universities as EVLS supporting about 720 student-athletes (53.9 % female, 46.1 % male) across 54 sports federations and competing on the highest national or international level (Lindahl & Karlsten, 2021).

During 2016-2018 a working group for DCs, consisting of DC practitioners from RIUs/EVLS, Swedish DC researchers, and officials of the Swedish Sports Confederation, re-conceptualized the national model for sports universities as part of the development of the Swedish DC guidelines (Swedish Sports Confederation, 2018a). The Swedish DC Guidelines is a culturally informed synthesis of national and international DC research, EU Guidelines on DCs of athletes (European Commission, 2012), experiences, knowledge, and best practice examples from RIUs and EVLS, and developed in line with the Swedish ‘strategy 2025’ for sports (Swedish Sports Confederation, n.d.a; Swedish Sports Confederation, n.d.b). The Swedish DC Guidelines outlines the organizational model for RIUs and EVLS and provide 36 guidelines to stimulate the development of sports universities in Sweden. In essence, the guidelines promote that a university as a part of a DC development environment (henceforth: DCDE) should (a) provide flexible study tailored to student-athletes based on a local policy in relation to the university’s regulations, (b) cooperate with sports federations or clubs to facilitate a good training environment, (c) facilitate student-athletes’ lifestyle balance by developing their DC competences, increase DC awareness and understanding, promote a whole person perspective to facilitate integrated DC support from sports and study staff, and facilitate peer-encounters by organizing a network for student-athletes, (d) facilitate student-athletes’ career transitions when entering or exiting the university or upon athletic career termination, and (e) provide a DC-coordinator to integrate efforts, and to organize and develop the DCDE as a whole, and DC support providers to help student-athletes with individual DC pathways. The Swedish DC Guidelines currently set a national standard for DC support across the country and inspire universities to further develop their support in line with recommendations from national and international DC research. The guidelines also stimulate an increased collaboration between the sports movement and academia to support the development of student-athletes in a socially responsible
The holistic athletic career model (Wylleman, 2019) outlines six interrelated levels of development, including athletic with four stages (initiation, development, mastery and discontinuation), psychological with five stages (middle childhood, early adolescence, later adolescence, early adulthood and middle adulthood), psychosocial with four stages representing the changes in the athletes’ significant others and support network, academic/vocational with five stages (primary education, secondary education, higher education, (semi-)professional athlete, and post-athletic career), financial with four stages of financial support sources for athletes from, for example, family, sports federation, sponsor, and employer, and legal with two stages (minor and adult).
The model provides a generic understanding for athletes’ normative career development, but when stages and transitions occur and how long they last depend on the person and sport, for example the mastery phase tends to be at a lower age in sports with early specialization. Beyond normative transitions (i.e., generally predictable for all, for example, junior-to-senior, adolescence-to-adulthood, or athletic retirement), student-athletes can also face non-normative transitions (i.e., less predictable, for example, injury), and quasi-normative transitions (i.e., predictable for certain groups of individuals, for example, transition to the university or cultural transitions) (Stambulova et al., 2021). DC transitions are of particular importance to student-athletes, as they imply simultaneous transition in both their academic and athletic levels of development. One example is the transition from gymnasium to university, which in several sports coincides with the junior-to-senior athletic transition.

The athletic career transition model (see Figure 2; Stambulova, 2003, 2009, 2020) describes a career transition as a turning phase or shift in the student-athletes’ development associated with a set of demands that they have to cope with in order to continue to develop successfully. Successful coping with such demands is determined by a dynamic balance between student-athletes’ resources and barriers. Resources are either internal, being intrinsic factors or strengths to a person, or external, being environmental factors or social support and help from others. Depending on the situation, context and person, what sometimes is a resource, for example, motivation, teachers support for sports, coaches’ support for education, training facilities, proximity, or finances, can likewise be a barrier to development, that is, an internal or external factor that interfere with the coping process.

The athletic career transition model describes four transition pathways. The most favorable pathway is a result of effective coping and means the student-athletes can mobilize their resources, compensate for any barriers, and cope with the transition demands, leading to a successful transition. Preventive interventions before or at the beginning of a transition can ensure that more student-athletes cope effectively with their transition. A longer path through the transition is a result of ineffective coping producing a crisis-transition. This is when insufficient resources and/or a number of barriers make it difficult

Figure 1. The holistic athletic career model (Wylleman, 2019).
for a student-athlete to cope with the transition demands, and therefore is in need of help and support in order to cope. If the intervention, for example, the development of resources or the elimination of barriers by counselling or education is effective, the person will have a successful, but delayed, transition. The model also predicts that ineffective interventions can, for example with time, turn into effective interventions, leading to a pathway that might involve some negative consequences of not coping with the transition demands, but through the intervention becoming effective, the person will have a successful, but delayed, transition. The unsuccessful pathway is when a student-athlete cannot cope with the transition demands, and either do not receive help, or the intervention do not reach a positive effect. An unsuccessful transition comes at a price, with negative health-related consequences, or “costs”, such as overtraining, burnout, or with the student-athlete dropping out of sports or studies, or both.

Figure 2. The athletic career transition model (Stambulova, 2009, 2020).

The Holistic Ecological Approach and DCDE Working Models

The holistic ecological approach (Henriksen, 2010; Henriksen & Stambulova, 2017) proposes a shift in research attention from the individual athlete to the broader developmental context or environment in which the athlete is embedded. The holistic ecological approach was developed to guide research into talent development in sports to explore how some environments are superior to others in helping athletes successfully manage the junior-to-senior transition (Henriksen, 2010; Larsen et al., 2013).

The theoretical basis for the holistic ecological approach come from three main areas, including (a) ecological psychology (Bronfenbrenner, 1979) in viewing athletes as embedded in their environment and describing the environment as a series of nested micro-and macro level structures, (b) systems theory (Lewin, 1936) in viewing the environment as a complex system with components, structure, functions, and development, and (c) cultural psychology (Si & Lee, 2007; Ryba et al., 2013) in considering the importance of culture, and viewing culture as a collective and multilevel phenomenon ranging from national culture to group culture.

The approach is guided by two working models, which serve as a foundation for data collection, analysis and the creation of empirically informed models summarizing the unique context specific features of an environment under study (Henriksen & Stambulova, 2017).
The researchers within the ECO-DC-project used the original working models developed to study athletic talent development environments (Henriksen, 2010) together with pilot research (Linner et al., 2017; Kuettel et al., 2018) to create two ecologically informed working models to study DCDEs and their effectiveness (Henriksen et al., 2020). A DCDE is as a purposefully developed system that aims to facilitate athletes’ investment in combining their competitive sporting careers with education or work (Morris et al., 2021). The DCDE and the DC environment success factors (DC-ESF) working models are described next.

The DCDE working model (see Figure 3; Henriksen et al., 2020) is a framework for describing the key environment components and their interrelations nested in a broader socio-cultural context. The model is structured into two levels (micro- and macro-) and three domains (sport, study, and private life) taking into account societal, sport, and educational institutions and cultures. As one of the main functions of a DCDE is to facilitate DCs, the student-athletes appear at the center of the model surrounded by their key stakeholders in sport, studies, and private life, for example, coaches, teachers, family, and peers. The micro-level covers the environment where student-athletes spend most of their daily life and contains people and organizational structures they interact with directly, for example, DC support team, study program, and teams, clubs or high-performance centers with staff. The macro-level refers to social settings that do not contain the student-athletes but affect them indirectly through relevant sport and educational systems and cultures. To illustrate the permeability and interplay of the various components, these are marked by dotted lines. The outer layer of the model represents the past, present and future of the DCDE emphasizing that the environment is dynamic.

Figure 3. The dual career development environment working model (DCDE; Henriksen et al., 2020).
The DC-ESF working model (see Figure 4; Henriksen et al., 2020) serve to summarize the factors that explain the environments effectiveness (or lack thereof). The DC-ESF takes as its starting point the preconditions of the environment, for example, financial, human, and facilities, and illustrates how the DC processes (e.g., activities, coordination, and support) and the philosophy of the DC support team affect the student-athletes’ development as athletes, students and persons, and their acquisition of DC competences. Philosophy of the DC support team is central to the model and is described as a set of key values and beliefs about how to best organize a support for student-athletes’ development. Components of the model are considered as interrelated and influence the environments effectiveness, in view of the student-athletes’ athletic and academic achievements, wellbeing and satisfaction.

Figure 4. The dual career environment success factors working model (DC-ESF; Henriksen et al., 2020).

Current Trends in DC Research

The development and status of European DC research was overviewed by Stambulova and Wylleman (2019). The term DC has been well established, research into the dual “sport and study” career dominates the dual “sport and work” career in the literature. Many studies were shown to implicitly focus on student-athletes’ health and wellbeing. The recent concerns and positions stand on athletes’ mental health (Moesch et al., 2018; Schinke et al., 2018) point to a gap and needed trend (Stambulova & Wylleman, 2019) in future DC research by also explicitly focusing on student-athletes’ health and wellbeing (e.g., Sorkkila et al., 2018). The Erasmus+ sport project DC for mental health (DC4MH) is ongoing (2021-2022) and expected to facilitate this need in knowledge. In Sweden, the monitoring project of DC experiences at Swedish sports universities, including student-athletes health and wellbeing (see Appendix C), will also contribute with valuable knowledge to this end in the future.
With regards to the dual “sport and study” career, the majority of research (Brown et al., 2015, Debois et al., 2015, De Brandt, 2017) has focused on understanding student-athletes’ DC pathways and transitions with related demands, resources, barriers and coping strategies, increasing the body of knowledge of student-athletes’ DC development from a whole person or holistic developmental approach (Wylleman et al., 2013). Stambulova and Wylleman (2019) concluded that the holistic developmental approach is well established and used in the DC literature and a growing trend is targeting the student-athletes’ support network, for example, family, friends, coaches, and DC support providers (Knight et al., 2018; Defruyt, 2019). In recent years, research targeting student-athletes’ developmental context from the holistic ecological approach has flourished by exploring DCDEs (Henriksen et al., 2020).

Another trend in the career research is Stambulova and Ryba’s (2013a, 2013b) promotion of shifting away from conceptualizing and thinking around careers, career development and career transitions as something fixed, generic, or universal to something culturally specific and contextualized. This ‘cultural praxis’ has encouraged researchers to use and integrate the holistic developmental (Wylleman, 2019) and holistic ecological approaches (Henriksen & Stambulova, 2017) and to design projects where theory, research, practice, and the participants’ context(s) are blended to better fit the student-athletes’ actual cultural context, and hence promote context-specific implications.

Previous DC Research

Below, previous research about athletes’ DC demands, coping resources and strategies, support, and DCDEs at university level is outlined.

Demands, Barriers and Potential Costs of a DC Lifestyle

Previous research into the DC demands of university student-athletes has commonly used the holistic athletic career model (Wylleman, 2019; Wylleman et al., 2013) to explore the demands (appraised as challenges and/or stressors; Stambulova & Wylleman, 2019) at different levels of development (athletic, psychological, psychosocial, academic, and financial) to understand what student-athletes need to contend with in order to continue to develop successfully. This and related research (Brown et al., 2015; Burlot et al., 2018; Cosh & Tully, 2014; Debois et al., 2015; Geraniosova & Ronkainen, 2015; Gledhill & Harwood, 2015; Harrison et al., 2020; MacNamara & Collins, 2010; Morris et al., 2015; Tekavc et al., 2015) shows that:

- at the athletic level, student-athletes, for example, need to train and perform well, and often cope with the transition from junior-to-senior level as well as manage performance expectations, injury setbacks and travelling;
- at the psychological level student-athletes are developing their identity which can impose role strain problems. They also need to maintain their motivation for sports and study and take more personal responsibility for their DC including looking after oneself;
- at the psychosocial level developmental demands include relocating for sports/studies with less parental support, and hence develop a new social network and manage relationships with sports- and non-sports peers and communication with coaches, teachers, family and support staff like DC support providers;
- at the academic level student-athletes need to attend classes, complete assignments and pass exams, and cope with the increased educational requirements and independency compared to what they might be used to from lower levels of education;
- at the financial level of their development the student-athletes often rely on parental financial support, secure own financial support through, for example, study allowances and sponsors, or earn financial income through, for example, a spare-time job. This enables them to pursue their DCs, as most of student-athletes do not earn enough revenue from their sport to finance their DC.
Previous Swedish research on athletes’ DCs has mainly focused on the adolescent and secondary education level, apart from Fryklund (2012; see also Bengtsson & Johnson, 2012) who studied the experiences of two groups of Swedish university student-athletes (recently admitted, n = 26; with 3 years of university experience, n = 16). The university student-athletes perceived the DC as difficult, experiencing, for example, an increased athletic level, struggled to maintain relationships, and needed to work to make ends meet. Nevertheless, the student-athletes considered their DC as possible and rewarding, through for example, developing a multi-faceted identity.

The summary of DC demands above illustrates the dynamic life situation the student-athletes are in, and the need for student-athletes to balance their time and energy investments in such a way that they can manage the integration of sports and studies (Aquilina, 2013; Eccles & Kazmier, 2019). Stambulova et al. (2015) found that, the student-athletes who successfully managed to integrate sports and studies in a DC lifestyle did so by making shifts in prioritizing, for example, focusing on sports during competitive phase and on studies during exam periods, and that to feel adjusted in the DC pathway was about finding and maintaining a DC balance. Optimal DC balance was defined as “a combination of sport and studies that help student-athletes achieve their educational and athletic goals, live satisfying private lives and maintain their health and wellbeing” (Stambulova et al., 2015, p.12)

In an attempt to move away from separation of DC demands at different levels of development the researchers and practitioners across nine countries (Belgium, France, Great Britain, Italy, Netherlands, Poland, Slovenia, Spain, and Sweden) within the EU-project GEES developed a list of seven challenging “DC scenarios” that encapsulated demands across different levels of student-athletes’ development (Wylleman et al., 2017). The scenarios were (abbreviated; see Study I for full versions):

1. **Exams** - exams conflict with a crucial competitive phase
2. **Study plan** - select a study plan to manage the integration of both sport and study
3. **Miss days of study** - catch up missed days of study after/during camps/competition
4. **Relocation** - relocate for DC with less family support and new social network
5. **Injury** - studying and competing, but suffering from an injury
6. **Social life** - DC makes it challenging to have a rich social life
7. **Financial** - the need to generate an income

The experience and coping with the DC scenarios were explored across nine European countries in a sample of 859 student-athletes (48% male and 52% females) aged 17-26 years old (M\(_{\text{age}}\) = 21.4, SD = 2.2) and competing on a minimum national level (De Brandt, 2017). The scenarios the student-athletes had experienced the most were Social life, Miss days of study and Exams (M\(^{\text{max}}\) = 87-79%). Least experienced were the Injury (57%) and Financial (29%) scenarios. The European student-athletes reported an average-to-good coping (M\(^{\text{ave}}\) = 3.21-4.22; SD\(^{\text{ave}}\) = 82-1.05) with the scenarios. They coped the best with the Relocation (M = 4.22; SD = .86) and Study plan (M = 3.74; SD = .82) scenarios, and the least good with the Injury (M = 3.57; SD = .98) and Financial (M = 3.21; SD = 1.05) scenarios (De Brandt, 2017).

Beyond DC demands, student-athletes can also face DC barriers, meaning internal or external factors that interfere with the coping process. Barriers to athletes’ DC development can be a lack of flexibility and financial support (Geraniosova & Ronkainen, 2015; López de Subijana et al., 2015) or negative biases by significant others, for example coaches, towards athletes’ educational investments or DC pathway (Geraniosova & Ronkainen, 2015; Gledhill & Harwood, 2015). Barriers can also be lack of professional support/DC support programs (Fuchs et al., 2016) or a perceived lack of time for social life, rest, and recovery (Kristiansen, 2017). Unfavorable situational conditions and DC barriers in combination with student-athletes inability to meet the demands of their DC lifestyle put them at risk for negative health and developmental consequences, such as prolonged levels of high stress (Kristiansen, 2017; Sallen et al., 2018), overtraining and burnout (Gomez et al., 2018), increased risk of injuries (Ivarsson et al., 2018), or premature dropout from sports, studies or both (Baron-Thiene & Alfermann, 2015; Gledhill & Harwood, 2015; Sorkkila et al., 2018; Sorkkila et al., 2020).
Personal Resources and Coping Strategies for a Successful DC

The key role of personal (or internal) resources and coping strategies has been highlighted in relation to student-athletes’ successful adaptation and coping with DC demands (Debois et al., 2015; De Knop et al., 1999; Linnér et al., 2016; Stambulova, et al., 2015). Student-athletes’ perceptions of important personal resources for a successful combination of sports and studies have been explored explicitly or implicitly in several studies (e.g., Aquilina, 2009; Brown et al., 2015; Burlot et al., 2018; Cosh & Tully, 2014; Fryklund, 2012; MacNamara & Collins, 2010; McKenna & Dunstan-Lewis, 2004). Personal resources and coping strategies identified in these studies include career- and self-awareness, patience in development, commitment to excelling, dedication and strong work ethic, ability to set and monitor goals, interpersonal skills, self-discipline, being resilient and adapt well to different circumstances, and ability to make personal decisions and take responsibility for own actions. Moreover, the most recurrent resources and coping strategies across studies relates to good planning, organization and time-management skills (including planning time for recuperation) and the ability to prioritize.

Personal resources and coping strategies can also be conceptualized as athletes’ DC competences including their knowledge, skills, experiences, and attitudes (Hunter, 2004). DC competences of student-athletes were explored in the GEES project. Based on the previous research (e.g., MacNamara & Collins, 2010; MacNamara et al., 2010a, 2010b) and expert/practitioner opinions across Europe, the DC Competency Questionnaire (DCCQ-A) was developed (De Brandt et al., 2018). Student-athletes’ perceived importance and possession of 38 DC competences were explored (see full list of competences in Study 1). Across Europe, 3350 student-athletes (15-26 years old; \( M_{\text{age}} = 18.6 \text{ years}, \ SD = 2.5; \) 47% female, 53% male) considered all 38 DC competences as important-to-very important for a successful DC (\( M = 4.34, SD = .42 \)), and reported average-to-good possession of the DC competences (\( M = 3.71, SD = .49 \)) (De Brandt et al., 2018). The list of competences was further consolidated into four categories (29 items), including DC management (e.g., self-discipline, time-management, planning, and prioritizing), career planning (e.g., vision of where to go in life), emotional awareness (e.g., stress-management), and social intelligence and adaptability (e.g., ability to ask for help, collaborate with support staff, make and maintain relations) (De Brandt et al., 2018).

De Brandt et al. (2017) explored the four categories of DC competences in 107 Flemish university student-athletes (\( M_{\text{age}} = 20.5, SD = 2.0; \) 51% female) competing on at least national level. The Flemish student-athletes perceived all four categories of competencies as important for a successful DC (\( M_{\text{comp}} = 3.93 – 4.29 \)) and reported average-to-good possession of the four DC competency factors (\( M_{\text{comp}} = 3.36 – 3.68 \)). Large effect sizes (Hedge \( g_{\text{m}} \geq .80 \)) were found for the discrepancy between perceived importance and possession, indicating athletes’ general need to develop DC competencies (DC management = 1.74; Career planning = 0.97; Emotional awareness = 1.77; social intelligence and adaptability = 0.97). Female student-athletes reported the strongest need to develop emotional awareness (2.08) whereas male student-athletes perceived the strongest need to develop DC management competences (1.91). DC competences have also been explored in adolescent student-athletes at secondary educational level (see, for example, Perez-Rivas et al., 2020).

External Resources/Support for a DC

The importance of supportive parents, siblings, and coaches as well as other athletes/peers and support staff during athletes’ development is well documented, but what makes the support effective is not as well understood (Rees et al., 2016). Research into DC support, acting as external resources complementing and/or compensating the student-athletes personal resources/DC competences has increased (Stambulova & Wylleman, 2019) and focused on student-athletes’ significant others (coaches, parents, DC support providers, teachers and peers) and their views on DCs and DC support (e.g., Brown et al., 2015, Defruyt et al., 2019, Gledhill & Harwood, 2015, Ronkainen et al., 2018; Saarinen et al., 2020; Tessitore et al., 2021). A major conclusion across papers is how stakeholders through their attitude towards DCs become either a resource or a barrier for student-athletes’ development, for example, coaches who did not believe in the value of education made the combination more difficult.
In a seminal paper, Knight et al. (2018) investigated the role of student-athletes’ support network, including their parents, coaches, teachers, experts like lifestyle advisors, and to some extent peers. Across the network, similar approaches were used to support student-athletes. The role of the support network was to:

- recognize the day-to-day demands of a DC lifestyle and student-athletes’ needs and change their support in response, for example, teachers providing study flexibility or coaches changing training to adapt to study commitments,
- anticipate barriers and suggest solutions, for example, identify scheduling conflicts during exam periods or when travelling and helping student-athletes to proactively plan in advance,
- demonstrate a belief in the value of education and benefits of a DC,
- minimize barriers to maintaining a DC, for example, through flexibility, and dependent on the collective effort and communication across the support network, and
- create an autonomy-supportive environment to foster student-athletes’ autonomy, for example, by trusting student-athletes to make their own decisions but providing guidance for them to make informed decisions.

Knight et al. (2018) also concluded that the key factors for optimizing the support (and particularly to remove barriers to DC development) were: (a) focus on developing student-athletes as whole persons, (b) integration of efforts across the support network, for example, by working together rather than in isolation, have frequent and open communication, and provide similar messages, and (c) foster a culture of continuing education (most often done by parents) and that continuing an education does not mean the end of an athletic career as sometimes inferred by stakeholders in sport.

The role of DC support providers was introduced through the GEES project as a professional consultant related to an educational institution and/or an elite sport organization – or certified by one of those – that provides support to elite athletes in view of optimizing their DC (Wylleman et al., 2017). Within a sample of 42 experienced DC support providers (27 male and 25 female) across seven European countries, Defruyt (2019) explored what strategies DC support providers employed to support student-athletes when experiencing the GEES scenarios 1-6 (see scenarios above, the Financial scenario was excluded). From this scenario-specific exploration and with support in previous research (Fuchs et al., 2016; Debois et al., 2015; Geraniosova & Ronkainen, 2015; Knight et al., 2018; Pavlidis & Gargalianos, 2014) a summary of the main external resources that were in place to support student-athletes can be made, including:

- a clear and efficient support structure, which implied clear roles among support providers, which were communicated from the start to all stakeholders, coordination of services, athletes know where to go for support, integration of efforts, and a referral network in case of specific problems,
- cooperation and communication between the educational and sports field, including communication to come to mutual awareness and acceptance and develop trust-based relationships, having clear aims and arrangements with everyone in line, having regular cooperation with shared council to discuss progress, and involve coaches in student-athletes study planning,
- academic support and flexibility, which included an individual tailor-made approach, academic attendance and exam flexibility formalized in contracts based on regulations/legal requirements, adaptive study trajectory for athletes, tutorships, and distance learning opportunities,
- expert support and sports flexibility, which implied a sport environment in which missing training for study is accepted, providing a long-term development vision to counter-weight the often short-term results-oriented vision of elite sports, access to a network of experts in sports sciences, for example, physiotherapy, nutrition, psychology, and medicine, injury prevention support, and utilizing a multidisciplinary support with follow-up,
- facilitation of peer-encounters, including peer-mentoring, study-buddy system, and organize voluntary social activities to prevent social isolation,
- awareness-raising in stakeholders, including promotion of teacher understanding, and promotion of a holistic view of athletes in sports federation including the importance of a satisfactory social life, and
- focus on supporting student-athletes’ autonomy and enhanced self-regulation with both a proactive attention and support, for example, give additional attention to first-year students, show general approachability, and offer fixed follow-up moments to discuss adaptation, as well as reactive crisis-support, for example, upon crisis-transitions.

Related to the provision of DC support is the competence of the DC support providers. This has been explored in a sample of 330 DC support providers across Europe (Defruyt et al., 2019). A 6-factor framework of 33 competences was found important by the DC support providers and included: (a) Advocacy and cooperation competencies, for example, ability to collaborate with decision-making bodies advocating for interests of student-athletes, (b) Reflection and self-management competencies, for example, ability to maintain own well-being and energy level necessary for work with student-athletes, (c) Organizational competencies, for example, ability to act in congruence with the mission of the organization, (d) Awareness of student-athletes’ environment, for example, knowledge of the sports related to student-athletes you work with, (e) Empowerment competencies, for example, ability to enhance communication skills in student-athletes, and (f) Relationship competencies, for example, ability to be an active and supportive listener. For more information on this and DC support providers’ challenges see Defruyt et al. (2019, 2021).

**Essential Features of DCDEs**

Previous research has showed the importance of environmental aspects for the facilitation of student-athletes DCs (Brown et al., 2015; Kuettel et al., 2018; Pink et al., 2015). Previous research into athletic talent development environments often included schools as an environment component and communication and links between sports clubs and schools were considered important for the holistic development of the athletes (Henriksen et al., 2010a, 2010b, 2011, 2014; Larsen et al., 2013; Mathorne et al., 2021). Aquilina (2013) found that contributing features of institutions, where student-athletes successfully managed a DC, were proximity of high-performance training facilities and classrooms, flexible academic programs taking into consideration the requirements of elite sport, and an established support network of academic and athletic staff.

Expanding on the previous research (e.g., Defruyt, 2019; Knight et al., 2018; Henriksen, 2010) and utilizing the holistic ecological approach (Henriksen & Stambulova, 2017), the ECO-DC project was initiated to explore DCDEs and their effectiveness. Based on different types of DCDEs (Morris et al., 2021), DC researchers and expert partners across the European countries (Belgium, Denmark, Finland, Slovenia, Spain, Sweden, and the UK) selected one environment in each country for in-depth exploration. The project included seven case studies of DCDE across Europe (Study III, De Brandt et al., 2019; Henriksen et al., 2020; Korhonen et al., 2020; Nikander et al., 2020; Ramis et al., 2019) and additional case studies have followed since (Kiens & Larsen, 2021). In a subsequent cross-case analysis, Storm et al. (2021) summarized that while all studied environments in ECO-DC were unique, effective DCDE shared ten essential features summarized into two overall themes: holistic structure and shared DC philosophy. The two themes and associated features are overviewed below.

**Holistic structure** (Storm et al., 2021) referred to the various components of the environment (people, institutions etc.) and their role and function, and the communication and coordination between the different components across the environment domains and the micro- and macro-levels. This theme included five features:

- Dedicated DC support team, which implies the presence of a dedicated team (or person) providing a central entry point for DC support and responsible for coordinating sport and study domains.
• Integrated efforts, which implies coordination and communication across stakeholders in sport, study, and private life domains (e.g., coaches, teachers, family, DC support team) and levels (e.g., formal or informal networks) about student-athletes DC challenges and leading to student-athletes experiencing concordance and synergy in daily life.

• DC-understanding and support from the environment, which implies that people around the student-athlete, for example, coaches, teachers, family, DC support team, have a clear understanding of the challenges faced by student-athletes and acknowledge, accept, and support DCs. Student-athletes are supported to focus on sport or study at different times depending on key priorities at that time.

• Role models and mentorship, which implies the presence of appropriate persons from which student-athletes can be guided and inspired by, look up to and learn from. It can be formal mentorships or observational learning. Successful solutions to DC challenges are shared.

• Access to expert support, which implies that when in need, student-athletes have access to expert services either within the sport or study domain or the DC-support team provides a referral network to service such as nutrition, physiotherapy, sport psychology, and sports medicine.

A shared DC philosophy (Storm et al., 2021) implied that key stakeholders in the environment, for example, DC support providers, and sport and study staff, shared basic ideas and values about how to support student-athletes’ DCs. The five features included in this theme were:

• A whole person approach, meaning that stakeholders acknowledge that sport, study, and private life domains all influence student-athletes’ lives and therefore take an interest in student-athletes’ experiences, challenges, and learning across domains, and focus on developing the individual holistically in whatever path they select. Student-athletes are individuals with different needs and interests.

• An empowerment approach, which implies that opportunities are provided for student-athletes to develop internal and external resources and competencies to manage their own DC and progressively taking steps towards becoming autonomous, for example, by being actively involved in key decisions regarding their own DC and support initially being more proactive to with time being more reactive.

• Flexible DC solutions, meaning stakeholders acknowledge that student-athlete require flexible solutions as their needs differ depending on the sport, education, and individual circumstances. Flexibility implies extra focus on sport when needed (study flexibility) and extra focus on study when needed (sport flexibility).

• Care of student-athletes mental health and wellbeing, meaning DCs are managed in a socially responsible manner in which people around the student-athletes recognize their responsibility, not only for the student-athletes’ sport and study achievements, but also for their wellbeing and mental health. The DC practice includes ethical conduct guidelines and support systems, for example referrals.

• An open and proactive approach to the development of the environment, meaning the DC-support team and DC support providers engage in on-going development and improvement of the environment as a whole and their own competencies, through for example, education, evaluation, and research.
Towards a Professional DC Practice

The professional DC practice is developing across Europe (European Commission, 2012; Stambulova & Wylleman, 2019; Wylleman et al., 2017). Beyond nations across continental Europe, UK, and Scandinavia, the importance of how to facilitate athletic development in combination with further education has been in focus in recent years across, for example, Australia and New Zealand (Ryan et al., 2017; Stambulova & Ryba, 2013). A shared precondition across these nations is that they, in contrast to the collegiate system in the United States of America, keep the spheres of sport and education separate, requiring cooperation between educational and sporting organizations to help athletes balance sport and study. To help athletes with their DCs, the GEES project highlighted the importance of developing the role of the DC support provider, which was defined as “a professional consultant related to an educational institution and/or an elite sport organization – or certified by one of those – that provides support to elite athletes in view of optimizing their dual career” (Wylleman et al., 2017, p. 18).

In Sweden, the professional DC practice is developing based on the recognition that there is a need to develop and educate people specialized in DCs. Key for this development has been the dissemination of research findings, sharing of good practices, and establishing the Swedish national guidelines for elite athletes DCs (Swedish Sports Confederation, 2018). In recent years, national educations for DC support providers across Swedish sports universities and national sports federations (see Appendix B) have been held by the Swedish Sports Confederation. These educations have aimed to stimulate the development of a DC practice at university level in line with the Swedish DC guidelines (Swedish Sports Confederation, 2018a). Core components of such educations include relevant frameworks and research findings previously overviewed in this introduction. Methods and instruments used by DC support providers in Sweden, and Europe (see for example Wylleman et al., 2017, p. 146), have also been shared to contribute to the practices with student-athletes covering ideas for data collection, intervention, and evaluation. In relation to the ongoing development in Sweden, two major conclusions can be made:

- The role of DC support provider is starting to be established in Sweden. Support is typically provided by a university guidance counsellor (or the like) used to helping students, but not necessarily athletes, with individual programs of study. The Swedish DC guidelines currently identifies two roles. DC-coordinators work to organize, coordinate, and develop the DCDE as a whole, and DC support providers work closely with student-athletes to help them with their individual DC pathway. Depending on the university, both roles can be held by one person or they can be split between several people, requiring careful coordination (Swedish Sports Confederation, 2018a).
- Although having the Swedish DC guidelines (Swedish Sports Confederation, 2018a) which outlines key areas of support, there is a lack of applied frameworks that can guide the support provision to university student-athletes.
Rationale for, Aims and Structure of the PhD Project

Rationale for the PhD Project

Facilitating the combination of sport and study has been an integrated part of Swedish elite sports for decades. Since the 1970s the focus has been on facilitating an elite sports investment and upper secondary education for adolescent student-athletes. Completing upper secondary education is important, but today such an education is not necessarily enough to ensure a satisfactory work placement in the labor market. According to Swedish national statistics (Statistics Sweden, 1970; Swedish Higher Education Authority, n.d.a) there were as many persons who took their first higher education degree in 1999/2000 as there were persons who took their upper secondary degree in 1969. And, since 2000 the number of people earning their first higher education degree has almost doubled (Swedish Higher Education Authority, n.d.b). This illustrates the trend of further education at university level today and the need to extend DC support beyond the upper secondary level.

From previous research we know that completing an education alongside investing into sports can facilitate athletes’ post-athletic career adaptation (Park et al., 2013; Torregrossa et al., 2015). We also know that pursuing a DC can be challenging as it involves managing the integration of athletic- and non-athletic demands in a sustainable lifestyle (Aquilina, 2013; Brown et al., 2015). DC arrangements are needed to enable the DC pathway and avoid a situation in which athletes feel they need to choose between investing in sports or pursuing education. Such arrangements should ensure that student-athletes can manage the demands of their DC to reap the long-term benefits of a DC engagement and limit the risk for negative health and developmental consequences. This aim is well-captured in the concept of optimal DC balance (Stambulova et al., 2015), in that student-athletes should meet their goals in sport and education, but also live a satisfactory private life and maintain their health and wellbeing throughout the process. DC balance is therefore a central concept in this PhD Project.

Since 2012, there has been a call from the European Union to member states to develop a support provision throughout athletes’ DCs based on national research (European Commission, 2012). In 2015, the Swedish DC system was expanded to include the university level, but limited research exists that targets the experiences and contexts of athletes’ DCs at Swedish universities. This PhD Project was initiated to forward the research basis for athletes’ DCs at university level in Sweden, and by means contribute to the development of the support provision being established. To contribute to such developments, there was a need to:

- explore student-athletes’ DC experiences from a holistic developmental approach and by doing so improve the understanding of student-athletes’ challenges and coping resources,
- explore the DCDEs that student-athletes are embedded in from a holistic ecological approach and in doing so gain a better understanding of how student-athletes can be optimally supported, and
- merge the developments of the ongoing research in a framework that could guide DC assistance at Swedish sports universities.

Overall Aim of the PhD Project

The aim of this PhD Project was to study the DC experiences of Swedish university student-athletes from the holistic developmental and the holistic ecological approaches, and to develop a framework for DC support at university level in Sweden. The first aim is explored through the empirical studies and the second aim is achieved through a synthesis of Studies I-IV and related literature by presenting the DC assistance (DCA) framework.
Positioning of Studies I-IV within the Athlete Career Discourse

The athlete career discourse in sport psychology is a historically constructed body of knowledge developing during the last five decades around athletes’ development in sport and life (Stambulova et al., 2021). The four studies included in this PhD Project are positioned in the existing structure of this discourse as overviewed in Figure 5. The structure of the athlete career discourse contains: (a) a foundation with shared assumptions no longer questioned among career researchers, for example, athletes as whole persons, (b) two interrelated research areas focusing on career development and career transitions guided by relevant frameworks, (c) an applied part consisting of career assistance in which both areas of research are utilized as a basis for programs, interventions and frameworks aimed at helping athletes deal with athletic and non-athletic issues and strive for career excellence, and (d) a cultural praxis emphasizing a holistic, contextual and idiosyncratic approach linking the different parts of the structure together (Stambulova, 2016; Stambulova et al., 2021).

<table>
<thead>
<tr>
<th>Cultural praxis of athletes’ careers</th>
<th>Career development research</th>
<th>In the PhD Project</th>
<th>Career assistance</th>
<th>Career transition research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contextual sensitivity. E.g., Transforming general working models into empirical models.</td>
<td>Aims to describe career development stages and pathways and predict normative career transitions. Guided by career development frameworks: E.g., Salmela (1994); Stambulova (1994); Wylleman &amp; Lavallee (2004); Wylleman (2019).</td>
<td>Studies I-IV and related research synthesized into the DCA framework.</td>
<td>Programs and interventions aimed at helping athletes to deal with athletic and non-athletic career issues and strive for career excellence. Guided by intervention frameworks, career assistance professional culture and application of relevant tools.</td>
<td>Aims to describe and explain the transition process and factors involved in normative, non-normative and quasi-normative athletic and non-athletic transitions. Guided by career transition frameworks: E.g., Schlossberg (1981); Stambulova (2003; 2009; 2020).</td>
</tr>
<tr>
<td><strong>Foundations:</strong></td>
<td></td>
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<tr>
<td>Conceptualizations of an athlete as a whole person, athletes’ development and relevant environment as holistic, and athletic career as part of, and contributing to, life career; career transitions as turning phases in career development capable of changing an individual’s career trajectory.</td>
<td></td>
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</tbody>
</table>

Figure 5. Studies I-IV positioned within the existing structure of athlete career discourse in sport psychology. Modified from Stambulova et al. (2021).
Studies I-II adopted the holistic developmental perspective and shared the focus on personal/internal and external factors related to the coping process as found in career transition research, but in these studies directed towards pre-transition situations conceptualized as DC scenarios (see more in Study II). Studies III-IV explored how DCDEs facilitate the development (Study III) and DC transition (Study IV) of their student-athletes. In Studies III-IV the broader developmental context or environment in which the student-athlete is embedded is in focus, making them context sensitive. Although not empirically making the step to applied practice, this PhD Project ends with suggesting the DCA framework. The DCA framework is situated within the Swedish DC development/university context and integrates the parts of the PhD Project into a whole and it also sets the aim of professional DC practice to be helping student-athletes develop and maintain optimal DC balance (Study II; Study IV; Stambulova et al., 2015) to facilitate their striving for career excellence (Stambulova et al., 2021). Career excellence is not a destination to reach, but a journey to take, or process of striving for. Stambulova et al. (2021) defines career excellence as “an athlete’s ability to sustain a healthy, successful, and long-lasting career in sport and life” (p.14). Stambulova et al. explain that healthy implies high resourcefulness and adaptability, meaning an athlete can cope with career demands while adding to individual resources. Successful means athletes strive for achieving meaningful goals in sport and life in general while satisfying basic psychological needs and maintaining health and wellbeing. Long-lasting means sustainability and longevity in both sport and life (Stambulova et al., 2021).
Methodology and Ethics

Ontological and Epistemological Positioning

The word “science” comes from the Latin word “scientia” meaning knowledge. How do we separate knowledge (Swe: kunskap) from knowing (Swe: vetskap) and science (Swe: vetenskap)? What is it that makes science something else? According to Rosenberg (2016) any such question is an exercise in philosophy of science and as Hacking stated “I cannot expect successfully to dispel or solve problems where so many wise heads have written so many wise words without effect” (1999, p.5). Consequently, these questions remain. As for me, this makes me humble towards any claim or notion of knowing. And maybe that is the key, the humbleness towards not knowing, rather than the claim of knowing.

The nature of reality and human beings (ontology), the relationship between the inquirer and the known (epistemology), and the way we go about to study this (method) is deeply interrelated. To clarify from the start, I position my PhD Project within post-positivism implying realism and a modified objective epistemology (Smith et al., 2012).

At the ontological level, realism is a view of reality as (at least in part) independent of any perceiver, and this is contrasted with idealism (sometimes referred to as ontological relativism) which implies that reality is always dependent on mind and thinking (Smith et al., 2012). As Chalmers stated: “I doubt if any serious contemporary philosopher holds that we can come face to face with reality and directly read off facts about it” (2013, p. 210). The notion of ultimate realism, with roots in logical-positivism, seems largely abandoned (Chalmers, 2013). So seems the notion of linguistic idealism, that all that exists is mental (Hacking, 1999), as modern relativists accept that there is a material world around us, but that knowledge of that world is mind-dependent (McGannon et al., 2021).

I position the PhD Project in realism. In this sense there is something “out there”, a single external reality independent of the inquirer that can be explained, but never fully apprehended, only approximated, for example, probabilistically or inductively, and that we investigate (e.g., human experience) are real phenomena that exist in a reality external to the researcher. This contrasts with the relativist/internal view of reality as social, multiple, fluid and subjective, and existing in mental and discursive constructions (Hacking, 1999; Smith et al., 2012). One example of the realist view within my PhD Project is the notion of DCDEs (see Study III and IV). I believe that the environments under study do exist, beyond our interest in them, and that these environments can be described and explained in a (more or less) accurate way that reflects how the environment really functions (at that point in time). A relativist notion of such environments would be that of a mental construction, interpreted from the multiple views/realities of the people within such an environment, or rather, the interpretation of the multiple environments mentally constructed by these people.

Grounding the project in a modified (read “softer”) objective epistemology, I acknowledge that we can never achieve complete true knowledge about a phenomenon/reality, only approximations of truth, and all knowledge can be triumphed by new knowledge that falsifies previous research/theories or extends our previous understanding beyond what was previously known (Lewens, 2015). In this respect we neither receive nor have knowledge but test it until it is no longer valid. Although we will never know if or when a theory has provided a true explanation of reality, I sympathize with Chalmers (2013) when stating:

We only have rough and ready correspondence or correspondence up to a point. But this rough and ready notion, implicit in common sense and refined by science, is intelligible and is sufficient to make sense of science as a search for the truth and as progressing towards the truth (p. 266).
The acceptance of never reaching truth, especially within social sciences and psychology, is also manifested in our use of theories (or frameworks/models). Our theories are like maps, always a simplification of the landscape/reality and only covering what the theory itself targets. Or as formulated by one of my theory of science teachers: “A theory says something about something, not something about everything, or everything about something” (personal communication, L. Wiklund-Gustin, September 20, 2018).

The acknowledgement of this further highlights the necessity towards being humble in our claim of (not) knowing (the full picture).

Within the objectivist epistemology the researcher and the researched are independent entities and meaning exists in “objects” that can be discovered using appropriate methods (Chalmers, 2013). Although striving for independence between researcher and the researched I (from a modified objectivist epistemology) recognize that human observation is unavoidably partial and uncertain, meaning absolute objectivity is not possible, and that a researcher in various ways, for example, through decisions might impact the research process (Chalmers, 2013). However, for me the key point separating me from a social constructionist is in the difference of trying to be “neutral” (or in other words reduce bias) versus being a passionate “co-creator” of reality in the project (Hacking, 1999). I recognize that we cannot describe the world without the use (and limitations) of language, but in the process of studying the object I have aimed towards not influencing it or being influenced by it, for example, being a passive observer blending in to minimize my influence on the natural occurring events within the environment observations in Study III. I recognize that, although I believe in an external independent reality, I can also sympathize with the notion that knowledge is a product of mankind and therefore could be seen as socially constructed. For me, the key separator in this project has been the end goal. In post-positivism the goal of inquiry is prediction and control (or predictive success; Rosenberg, 2016) in comparison to the relativist trying to interpret the ways in which people construct their meanings of a given phenomenon to understand the setting (Smith et al., 2012). As Chalmers (2013) stated: “the construction of, necessarily linguistically formulated, claims about the world is one thing. Their truth or falsity is another” (p. 211). For me, the key tipping point is encapsulated in the word accuracy, trying to capture, for example, the lived experience of the student-athletes in Study II in an accurate way. Which must imply that there is a right or true way of doing this, and in turn pushing me towards realism. I typically support the doctrine that the whole is more than the sum of its parts, implying a sense of holism (Rosenberg, 2016). This is relevant specifically in Study III and Study IV about environments and their micro- and macro- structure inspired by Bronfenbrenner’s (1979) theory of human development and systems theory (Lewin, 1936; Patton & McMahon, 2006). This perspective borders on a functionalism perspective – identifying and explaining features of the environment that are beyond but affecting the individual’s behavior (Rosenberg, 2016). In relation to this and of specific relevance for my PhD Project is the logic of how to make a synthesis of the holistic developmental approach (exploring the DC development for the individual, see Study I and Study II) and the holistic ecological approach (exploring the features of the environment supporting or hindering such development, see Study III and Study IV). At the surface, one might think there is an inconsistency between perspectives and reality here, but I argue there is not. Although targeting the whole environment and not the individual in Study III and IV, I believe the features that explain the environment, are in simple terms, the output of the interrelationships of people and actions in that environment, which implies a causal chain from individual behavior to feature. That is, environment features are not an invisible force/social condition that directly affects a behavior. Rather, between are active agents/persons with power over their own choices (although the person does not always experience it this way). Taken together, my overall approach is therefore in line with a reductionism rather than functionalism approach (Rosenberg, 2016).

When discussing mixed-method research, a central controversy is on the (in)commensurability of methods and paradigms (O’Cathain, 2013; Gibson, 2019). Purists think paradigms cannot be combined, whereas pragmatists, who mainly consider the importance of a well-defined research question and analysis, but not the data collection technique, think that they can (Deetz, 1996; Smith et al., 2012). My PhD Project includes a reliance on both qualitative and quantitative methods, as well as a mixed-method approach, raising commensurability questions. I believe methods can be mixed, but not without stringency in metaphysics. That is, methods can be combined, but not paradigms/worldviews with opposing ontological and epistemological assumptions. I mean, how can reality be both inde-
Ethical Considerations

Grounded in the Universal Declaration of Human Rights (United Nations, 1948) and the Declaration of Helsinki, the project followed the ethical principles of informed consent and care for participants safety, integrity, and wellbeing (World Medical Association, 2013; D’Angelo, 2019). In all studies the participants were informed about the study purpose, that their participation was voluntary and that they had the right to withdraw their participation at any time without the need to explain why, and that their information would be treated confidentially. All participants signed (or digitally checked off) an informed consent. All studies were therefore conducted in line with the ethical standards of good research practice as stipulated by the Swedish Research Council (Gustafsson et al., 2017). All studies were authorized and approved by an institutional ethics committee for human studies. As part of Halmstad University the project complied with the European General Data Protection Regulation since implemented. The Declaration of Helsinki states that “While the primary purpose of medical research is to generate new knowledge, this goal can never take precedence over the rights and interests of individual research subjects” (World Medical Association, 2013, §8). At the heart of ethical considerations is the balance between potential risk for the participants and the potential value or gain of new knowledge. The Swedish law on research ethics (2003:460, §8-9) articulates this in its statues: “The welfare of human beings shall take precedence over the needs of society and science” and “Research may be conducted only if the risks it may entail for the health, safety and personal integrity of the participant are outweighed by its scientific value” (translation by author). Gustafsson et al. (2017) concluded that a research project always starts at a minus in terms of risk-benefit ratio, because at the very least the subject’s time is taken. This is not the least relevant in this project as student-athletes often perceive a general lack of time in their daily life. I have tried to respect this by being flexible and adjusting the timing and format of, for example, interviews to the preferences and schedules of the participants, for example, taking place in evenings or digital, postpone or meet them on a short basis, and meet at their training facility, university or housing, to facilitate including the activity into their daily routine.

Designing this PhD Project, no obvious physical, economic, or social risks were identified. To investigate human experience and psychological states is however prone to a potential risk of contemplation. Questions about past or present experiences may invoke feelings of discomfort or worry in that participants become aware of a situation or problem that they had not thought about before or even suppressed. Given the questions asked the relative risk for this has been judged as low. Nevertheless, it has been of importance for this project to inform participants about this potential risk, and to provide contact information to trained professionals (sport psychology consultants or clinical psychologists) to whom participants could reach out if they felt the need for it.

There are several benefits of the project that I believe have outweighed the risks of participation. Benefits include adding to the scientific discourse about athletes’ DCs, increasing awareness about Swedish university student-athletes’ needs, challenges and coping resources (not the least for participants themselves), as well as providing guidance for the development of DCDEs and support to student-athletes at Swedish university level. In parallel with completing the studies and related projects, findings and conclusions have been disseminated in conferences as well as tailor-made educations for practitioners across Swedish sports universities (see Appendix B), in turn benefitting the development of the Swedish DC system and student-athletes’ current and future situation across the country. Benefits of the project are also visible, for example, through the inclusion of project findings in the Swedish DC guidelines (Swedish Sports Confederation, 2018a).
The Empirical Studies

Overview of Studies I-IV

A brief overview of Studies I-IV is presented in Table 1 below. Each study is summarized on the following pages.

Table 1
Overview of the Studies I-IV.

<table>
<thead>
<tr>
<th>Study</th>
<th>Aim</th>
<th>Design</th>
<th>Positioning</th>
<th>Approach</th>
<th>Participants</th>
<th>Method</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Explore student-athletes’ DC competences and coping in relation to DC scenarios</td>
<td>Quantitative</td>
<td>Post-positivism</td>
<td>Holistic developmental</td>
<td>71 student-athletes</td>
<td>Questionnaire (De Brandt et al., 2018)</td>
<td>Effect size estimates (Lakens, 2013)</td>
</tr>
<tr>
<td>II</td>
<td>Identify DC scenarios that influenced student-athletes DC balance and how they coped</td>
<td>Qualitative</td>
<td>Post-positivism</td>
<td>Holistic developmental</td>
<td>6 student-athletes</td>
<td>Semi-structured interviews (Smith &amp; Sparkes, 2016)</td>
<td>Thematic analysis (Braun et al., 2016)</td>
</tr>
<tr>
<td>III</td>
<td>Describe a DCDE and the factors influencing its effectiveness</td>
<td>Case study</td>
<td>Post-positivism</td>
<td>Holistic ecological</td>
<td>4+16 student-athletes and 10+28 DCSPs/ DCDE staff</td>
<td>Observation and informal talks, semi-structured interviews and focus groups, and analysis of documents (Hodge &amp; Sharp, 2016).</td>
<td>Thematic analysis (Braun et al., 2016)</td>
</tr>
<tr>
<td>IV</td>
<td>Explore how a DCDE facilitated student-athletes’ DC transition to university</td>
<td>Mixed-methods case study</td>
<td>Post-positivism</td>
<td>Holistic developmental and holistic ecological</td>
<td>9 student-athletes and 4 DCSPs</td>
<td>Semi-structured interviews, survey, and analysis of documents (e.g., Hodge &amp; Sharp, 2016)</td>
<td>Thematic analysis (Braun et al., 2016) and two-level growth models (Muthén &amp; Asparouhov, 2012)</td>
</tr>
</tbody>
</table>

Note. DC = Dual career; DCSP = Dual career support provider; DCDE = Dual career development environment.
Study I

Introduction and Aim
Research into athletes’ DCs shows that a DC engagement carries benefits, but also challenges and potential costs if developmental demands are not met (European Commission, 2012). One key aspect might be to optimize student-athletes’ competences so that they can successfully manage challenges in their DC (Debois et al., 2015). Study I present the Swedish data on university student-athletes’ DC competences and coping, from the Erasmus+ sports project GEES. A cross-sectional quantitative design was implemented with the objectives to explore: (a) the student-athletes’ perceived need to develop DC competences in order to successfully combine sport and study, (b) if the student-athletes experienced and how they coped with specific DC scenarios, and (c) the magnitude of the association between the student-athletes’ possession of prioritized DC competences for each scenario and their scenario-specific coping.

Method
Seventy-one Swedish university student-athletes (49 females and 22 males) with a mean age of 25.21 (SD = 2.95) completed the DC competency questionnaire developed within GEES (De Brandt et al., 2018). The student-athletes reported their perception of 38 DC competences, for example, ability to prioritize, dedication to succeed, self-discipline, and ability to cope with stress, including how important each competence was for them in order to successfully combine their sport and studies on a 5-point (“unimportant” to “very important”) scale, as well as to what extent they possessed each competence on a 5-point (“very poor” to “very good”) scale. The student-athletes were then presented with seven DC scenarios - core issues that aimed to encapsulate student-athletes’ demands across different levels of their development, for example, Miss days of study, Relocation for DC, have a rich Social life, secure Financial situation. The scenarios were developed by the GEES project consortium. The student-athletes reported if they had experienced the scenario, how they had managed it on a 5-point (“very poor” to “very good”) scale, and selected the five DC competences (from the list of 38) that they perceived as most important to successfully manage the scenario.

To answer the study objectives, we calculated descriptive statistics and investigated the magnitude of effects rather than applying inferential statistics due to the small sample size (Ivarsson et al., 2015). For the perceived need to develop DC competences, the effect size estimation followed the recommendations and accompanying open-access spreadsheet (version 3.4) of Lakens (2013) to produce the most appropriate and sample size corrected effect size (in this case Hedges gav; small>=.20; moderate>=.50; large>=.80; Cohen, 1988). The mean difference between student-athletes’ perceived importance and possession of each DC competence was considered as an indicator of their need to develop particular DC competences, that is, a larger effect size indicating a stronger need. We used the formulation of Cohen (1992) to calculate Cohen’s f² and considered effects meaningful at the moderate level (small>=.02; moderate>=.15; large>=.35) to determine the magnitude (i.e., strength) of the association between the student-athletes’ possession of prioritized DC competences for each scenario and perceived effectiveness of scenario-specific coping.

Results
Student-athletes’ perceived need to develop DC competences: The student-athletes perceived all the DC competences to be generally important (Mmean 3.70–4.75). When considering the magnitude of the effect between how important student-athletes found each competence and to what extent they currently possessed the competence, the results revealed that the student-athletes perceived a general need
to develop their DC competences. More than 70% of the DC competences had a medium or large effect size, according to Cohen’s (1988) interpretation. Examples of competences the student-athletes perceived the strongest need to develop included: ability to cope with stress in sport and study, understanding the importance of rest and recuperation, ability to use setbacks in sport and/or study as a positive stimulus, ability to focus on here and now without being distracted, and ability to prioritize what needs to be done.

The student-athletes’ experience of, and coping with, the DC scenarios: The student-athletes in general had experienced and coped average-to-good (M = 3.39–4.38) with the DC scenarios. The scenarios Miss days of study and Social life were the ones most experienced by the participants (94% and 93% respectively). The least experienced, but still prevalent, were the Injury and Financial scenarios (53.5%). They managed the Relocation scenario the best, whereas the Social life and Financial scenarios were perceived by participants as the most challenging to cope with.

The student-athletes prioritized DC competences and scenario-specific coping: In three scenarios, the Study plan, Relocation and Miss days of study, the possession of the top five competences was moderately-to-strongly related to better scenario-specific coping. The strongest effect (.647) was found in relation to the Miss days of study scenario where the student-athletes’ ability to prioritize, plan in advance, use time efficiently, and their self-discipline and willingness to make sacrifices were strongly related to their scenario-specific coping. The associations between prioritized competences and coping in the other scenarios, including the Exams, Injury, Social life, and Financial scenarios, were all below the level of effects that we considered meaningful.

Also making an analysis across scenarios, we identified transferable competences; most frequently prioritized by the participants to manage different DC scenarios. The key transferable competences were ability to plan in advance, prioritize what needs to be done, and use time efficiently, as well as dedication to succeed, perseverance during challenging times, and willingness to make sacrifices.

Contribution

This study contributed to the DC research by: (a) identifying needs of Swedish university student-athletes in development of DC competences, (b) demonstrating the relevancy of DC scenarios developed across Europe to the context of Swedish university student-athletes, (c) revealing the prevalence of DC scenarios and student-athletes’ perceived effectiveness of managing them, (d) identifying the competences prioritized in coping with each scenario and transferable across scenarios, and (e) exploring the associations between possession of prioritized DC competences and effectiveness in coping with three scenarios. The study supports DC competences as central for student-athletes’ DC coping and suggests that there might be a need for Swedish university student-athletes to develop their competences to cope even better with their DC. The study has contributed to the development and recommendations provided in the Swedish DC Guidelines (2018a) including supporting a competence-oriented support for athletes’ DCs in Sweden.

Study II


Introduction and Aim

Pursuing a DC, student-athletes experience demands across their athletic and non-athletic levels of development (Brown et al., 2015; Wylleman, 2019). This means student-athletes are faced with the challenge of balancing their time and energy to fulfil their commitments in different life areas. In this study we considered optimal DC balance (Stambulova et al., 2015) as the overarching challenge for student-athletes. We continued the work initiated in the GEES-project in which DC scenarios were introduced as encapsulating the demands from different levels of student-athletes’ development.
In this study we aimed to (a) identify DC scenarios that influenced university student-athletes’ optimal DC balance, and (b) explore the factors involved in the coping process, including personal resources, support, barriers, and coping strategies.

Method

A post-positivist qualitative design was implemented through semi-structured interviews (Smith & Sparkes, 2016). The student-athletes were selected based on a set of criteria and needed to be: (a) recipients of the Swedish Sports Confederation scholarship for combining high-performance sports and higher education, (b) alumni/bachelor graduates the current year to enable reflections throughout the full university DC, and (c) competing on at least the highest national level. The six participants (four female and two male) were 24.5 years old ($SD = 1.05$) and all bachelor graduates in, for example, Sport Sciences, Physiotherapy, or Economy. They represented four universities across the country, both individual and team sports, for example, orienteering, equestrian sport, and volleyball, and competed on senior national ($n = 1$) or senior international ($n = 5$) levels.

The semi-structured interviews consisted of five parts. First, participants shared about themselves and their DC background. Second, participants were provided with a blank two-page template of a DC profile. The profile had two major parts. A horizontal line at the mid-bottom and a percentage scale (0-100) on the left-hand side. Participants were asked to indicate their university admission and graduation/today on the horizontal line making a timeline. They then illustrated the dynamics in their DC lifestyle by indicating their perceived dedication of time and effort into their sports, studies and private/social life along the timeline using the percentage scale, for example, 50% of time towards sports, 30% towards studies, and 20% towards private/social life at a given time. Third, participants reviewed their timeline to recollect their experience and identified difficult situations/period across sport, study or private/social life that had challenged their DC balance and marked them on the timeline. Fourth, participants briefly shared how they had balanced their DC throughout the university studies, and then, in the fifth step and in relation to each identified situations/periods, shared what was challenging and how they had coped. For example: Please describe the situation/period? How did you manage? What made it easier or more difficult to cope? Interviews were 118–179 minutes long ($M = 149.2$; $SD = 28.6$).

A coding reliability thematic analysis (Braun et al., 2016; Braun & Clarke, 2019) was implemented. After transcribing and reading the interviews several times, first versions of scenarios were inductively identified followed by organizing the data in relation to each scenario. Scenarios in this respect acted as data domains (Braun & Clarke, 2019) and within each scenario, meaning units were categorized into high-order themes (personal resources, support, barriers, and coping strategies; inspired by the athletic career transition model, Stambulova, 2009) followed by inductively generating the lower-order themes. As new themes or scenarios were generated, previously coded materials were checked for signs of emergent scenarios or themes. The fourth and fifth steps involved going back and forth between meaning units, themes, and interview transcripts to refine and name all themes. The final step involved writing the study findings. I was responsible for the analysis and my co-authors/PhD supervisors acted as critical friends. Throughout all steps of the analysis we engaged in critical discussions about coding, analytical choices, and interpretations to come to a mutual understanding and agreement about the accuracy of the findings. Central to this was all co-authors challenging interpretations and providing additional insights (McGannon et al., 2021). To enhance trustworthiness, the findings were shared with three of the participants who confirmed that the scenarios and coping efforts described did resonate with their experiences.

Results

The thematic analysis generated seven DC scenarios: Integrate sport and study on an everyday basis; A sport event coincides with exams; Maintain studies when away for camps or competitions; Finalize degree project and continue to train and compete; A need to change residence coincides with a performance slump; Engage in a romantic relationship along with sport and study; and Having a social life along with sport and study. The scenarios, their characteristics and student-athletes’ corresponding coping are described in full in Study II. Key coping resources included personal resources with organization.
and time management, self-discipline, and motivation, together with coping strategies including planning in advance, prioritizing, and communicating with teachers, and support with DC understanding and advice from family, partner, peers, and teachers. The most common barrier was lack of understanding or flexibility from teachers. Student-athletes compensated for the lack of flexibility with adaptability, determination, and time management to create their own flexibility by prioritizing sport, postponing study, and when necessary, giving 100% to reach their sport and study goals. Doing this, the student-athletes experienced elevated stress.

Contribution

This study added to the DC research by continuing the trend of integrating rather than separating demands across student-athletes’ levels of development and advancing the understanding of DC scenarios. Based on the findings, an updated definition of DC scenarios was suggested, and a taxonomy of DC scenarios was presented. DC scenarios were defined as pre-transition situations constituting a combination of student-athletes’ circumstances that compromises their DC balance. DC scenarios are characterized by coinciding commitments across developmental levels, and student-athletes need personal resources, support, and coping strategies to maintain their optimal DC balance. The taxonomy of DC scenarios included four types of dynamic pre-transition situations in which student-athletes’ circumstances challenge them to (a) maintain sport and study, (b) maintain study, (c) maintain sport, and (d) maintain personal life.

Study III


Introduction and Aim

As part of the ECO-DC-project, this study shifted the attention from the individual to the environment that student-athletes are embedded within and explored DCDE from the holistic ecological approach (Henriksen & Stambulova, 2017). The DCDE organized for athletics (i.e., track and field) by the Umeå School of Sports Sciences at Umeå University (who approved the use of their name in this study) was selected based on the recommendation from the Swedish Sports Confederation as a leading national example of a functioning DCDE. Umeå University is a Swedish national sports university. Building on the instrumental case by Henriksen et al. (2020) and related research, this intrinsic case study (Hodge & Sharp, 2016) was undertaken to: (a) provide a holistic description of a DCDE at university level in Sweden, and (b) investigate the factors perceived to influence the environments effectiveness in supporting the development of student-athletes.

Method

A case study design (Hodge & Sharp, 2016) positioned with post-positivism was selected to explore, from multiple perspectives, the complexity and uniqueness of a specific bounded case. The ECO-DC project consortium developed two ecologically informed working models to guide this research; the DCDE and the DC-ESF working models (see Introduction, or Henriksen et al., 2020, for model descriptions). Following the holistic ecological approach (Henriksen & Stambulova, 2017), we took a contemporary and real-time view of a DCDE and transformed the working models into empirical models grounded in the data.

An overview of the data collection is presented in Study III. Data were collected from multiple sources, including observations, semi-structured interviews and focus groups, and analysis of documents (Hodge & Sharp, 2016). Being a principal researcher, I spent eight and a half days in the environment
(about 85 hours in total). In situ observations (Thorpe & Olive, 2016) through taking part in real-life events and member interactions across different activities and situations, for example, meetings and training sessions, were blended with 10 semi-structured interviews and two focus groups with key members of the environment including athletics-students, DC support providers, coaches, teachers, and collaborative partners. Observations and interviews were carried out during the mid-part of the study term, while the athletics-students were fully involved in their studies and training, to develop a deep understanding of the holistic and meaningful characteristics of real-life events, persons, and context (Yin, 2009). As part of the observations, 44 informal talks/short interviews were conducted with additional stakeholders including 16 student-athletes and 28 staff members and partners. Analysis of documents, for example, operational plans and reports, policy documents, and web pages was carried out to prepare the researchers for the observations and continued throughout the study to facilitate the understanding of the environment.

Positioned within the paradigm of post-positivism and ontologically as realism (Smith et al., 2012), the DCDE and DC-ESF working models were instrumental, serving as coding frames in our coding reliability thematic analysis (Braun & Clarke, 2019) with models guiding our data collection, analysis, and presentation of findings. The first author developed initial versions of the empirical models and the case summary. These were discussed with the second author, revised, and then discussed within the research team, with the aim of providing a comprehensive, but not too heavy illustration and description of the case. To enhance trustworthiness, the models and case description were presented to participants and explored through a synthesized member checking (Birt et al., 2016; McGannon et al., 2021) to establish the degree with which our portrait resonated with them. The portrait of the environment and themes were considered accurate upon minor clarifications.

Results

Using the ecologically informed working models as our guide, we were able to describe the structure and key relationships of the DCDE of Umeå athletics and the factors perceived to influence the environment effectiveness. Below, I provide a description of the empirical models that summarize the case. For a full description of the case and empirical models see the Study III article.

**Holistic Description: The Empirical DCDE Model of Umeå Athletics**

The empirical DCDE model of Umeå athletics (see Figure 6) depicts the most important components and relationships as well as the structure of the environment. The DCDE was organized by the Umeå School of Sports Sciences (henceforth, the Sports School) together with partners. The Sports School was a working unit at the university and worked to develop sports in the region by connecting stakeholders for the benefit of sports research and education, organized a DC-support team, and acted as a sports-study link at the university. To facilitate sports and study for athletics in Umeå, the Sports School and a nearby elite sports gymnasium shared a training center - the athletics performance center. A group of 30 university and 20 gymnasium student-athletes trained there. Relationships to the five athletics-coaches and among peers ran long and deep, as university athletics-students often were former gymnasium students.

The daily life of the athletics-students was linked to the athletics center and they considered it as a second home. Their key relationship in the environment, indicated in the model by the bolded arrow, was to their coaches meeting them almost every day. It was the coaches who knew how things were going, and the athletics-students main responsibility in the relationship was letting their coaches know how they felt, so that, in the case, the coaches could adapt training or act as a link to further support (e.g., experts): "It’s the coaches who keeps track of the training and best understands … They care very much and [are] interested and want to help if it’s anything they can do” (athletics-student).

The DC support team at the Sports School included a DC-coordinator, a performance team coordinator and coaches from five high-performance centers (i.e., athletics, badminton, cross-country skiing, floorball, and orienteering/ski-orienteering). The team worked closely together and communicated about their student-athletes daily. The DC-coordinator worked primarily with flexible study and DC promotion, the coaches with training in their sports, and the performance team (with
experts in strength and conditioning training, physiotherapy, nutrition, and sport psychology) provided individual support to student-athletes on a needs basis and was a sounding board to coaches.

In the study domain, flexible study was solved through an agreement system based on a university DC regulation making flexible study for student-athletes a formal obligation for university staff. The DC-coordinator had spent ten years refining the support guidelines (i.e., a formal document with practical advice outlining the most important study adjustments, including for example the opportunity to reduce study pace or postpone an exam) and developing lines of communication across the university staff. Once an athletics-student was accepted, an agreement was signed, administered, and together with the support guidelines, shared by the Sports School to involved staff through a network of DC-contacts across the faculties/institutions/programs. The agreement and concept of DCs was now well-known, and flexible study, for example to post-pone an exam, was solved by athletics-students asking their teachers for it. If problems occurred, they could always reach out to the DC-contacts, or to the DC-coordinator for help, but this was rare as the system worked well: “We typically can walk up and talk to [teachers] and say that we have the flexible study agreement … and then they know pretty much what it means, that we can move exams and such, and usually they accept it” (athletics-student).

In the private life domain, the athletics-students lived scattered across town, but as the city was small, they were only a short bikeride apart. Most of them had relocated for their DC, and family provided important support from a distance. Their social life was characterized by having peers and friends through the good camaraderie at the athletics center, and they wanted to have but typically had no contact with student-athletes from other sports.

At the macro level, the environment rested upon a collaboration with financial agreements between the Sports School, the regional sports federation, and the local authority having shared a nonprofit foundation for 26 years in which they strived for a long-term sustainable development of elite sports in Umeå. In terms of cultural influences, the North in Sweden is often regarded as far from everything else and has a lower population density. The local authority therefore put strong efforts into making Umeå a culturally rich place to live to attract residents, and “sports is a growth factor” (head of partner organization). There was a long history of sport and education developing in interlaced ways, and student-athletes were important to Umeå and the shared identity of “Umeå breathes sports” (documents collected).

As for the environment in the timeframe, the Sports School and partners where in a developmental process of expanding the environment and their support to athletes beyond only those who combined sports with studies, to open up for various athlete career pathways in Umeå (e.g., solely sports, sports and study, or sport and work).

**Environment Effectiveness: The Empirical DC-ESF Model of Umeå Athletics**

The empirical DC-ESF model of Umeå athletics, as depicted in Figure 7, is summarized below. What stood out in the environment preconditions was the closeness and personalized relationships amongst the people (i.e., student-athletes, coaches, DC support providers, experts, university staff, and partners), a relational proximity that benefitted all communication. The DC-awareness was high and there was a positive attitude towards DCs. The athletics-students benefitted from the university regulation providing them with the right to flexible study, the geographical proximity in Umeå, having coaches and experts with years of experience working with student-athletes, and access to appropriate facilities. The main barrier was financial. The athletics-students were described as “living on the financial minimum” (coach) and often had a spare time job to cover their sports expenses, and budget for DC-related activities was low.

As for the key DC processes, the DC support team relied on an information approach explaining the environment, themselves, and their philosophy, as well as highlighting the athletics-students’ responsibilities and explaining what was provided for them. The athletics-students were then expected to take responsibility for their DCs, facilitated by flexible study, flexible training based on individual training programs, integrated DC planning and access to expert support on a needs-basis. The key daily process was the continuous DC planning between athletics-students and coaches. This DC planning was embedded in daily dialogue in trying to find a good balance between the individual’s training and study load by adjusting training. As said by an athletics-student: “It’s the coach you turn to the most, because the coach is the one who adapts training… the schedule in school is fixed”. A coach reflected...
on this planning: “We plan and adjust, here we need to reduce, here is a heavier exam period or here we push, but also this daily conversation, when things flow versus when it’s stress and pressure”.

The DC support team shared a strong and coherent philosophy with values and beliefs linked to the mission of a healthy performance development and life balance for the whole person: “What drives us is life balance, it’s our mantra … you have to get both [sports and studies] together, and at the same time feel good as a whole person” (DC-support team member). Student-athletes were considered as grown-ups who needed to take responsibility for their own development, and that no one could be forced into receiving support. Therefore, the core of the support was to create opportunities for various types of assistance, then be available and provide quick support upon request based on an empowerment approach. It was a matter of providing support without making the athletics-students dependent on their support providers, helping them to be in command of their own development. Linked to the process was the belief that sport and study benefitted each other, to allow the developmental process to take time and not trying to do everything at once risking one’s health, and to learn from others.

By taken part in the environment the athletics-students learned, for example, to plan in advance, including how to structure and prioritize time and effort. They also learned more about themselves and their sports and studies. As they matured, many of them took on more responsibility for their training and became more autonomous while using their coach as a sounding board. While being autonomous, it was still considered important to initiate support when necessary by asking for help. Some athletics-students misunderstood their grown-up role as meaning to do everything by themselves and rarely asked for help, which meant they sometimes missed out on available DC support.

As for the environment effectiveness, no athletics-students had dropped out from the environment during the last three years. The athletics-students earned sports medals at mainly national or Nordic events, felt they continuously improved in their sport, and earned their study credits. They acknowledged that at times, it was stressful (e.g., during periods with a high study load or when working alongside sports and studies), but nevertheless expressed high satisfaction with their situation and the environment.

**Summary of the Case**

Based on the two empirical models, the key aspects of Uméå athletics can be summarized as: (a) daily DC support provided through the coach-athlete relationship with coaches acknowledging studies; (b) integration of efforts across environment domains through a dedicated DC-support team acting as a sport-study link with extensive networks; (c) a university DC regulation providing student-athletes with the legal right to individualized flexible study organized through an agreement system; (d) DC awareness and understanding across environment domains and staff with a relational proximity that benefitted all communication; (e) geographical proximity of campus, training facility, and housing; (f) strong peer-relationships within the sport; (g) a DC support based on providing information and student-athletes taking on the responsibility for their DCs, facilitated by flexible study, flexible training, integrated DC planning, and expert support; and (h) a strong and coherent philosophy of the DC-support team centered around facilitating healthy performance development and life balance, with whole person and empowerment approaches.

**Contribution**

This study adds to the research literature by identifying features of a successful DCDE and showing the usefulness of the holistic ecological approach (Henriksen & Stambulova, 2017) in DC research. It also serves as a condensed insight into a well-functioning DCDE from which practitioners in Sweden and beyond can learn in their quest to optimize their DCDEs and support. Key findings point towards the importance of coordination and integration of efforts through a dedicated DC-support team to facilitate DC understanding and flexibility across the environment, that support providers and especially coaches care for athletes beyond sports, and that sport and study stakeholders work together to develop a shared and coherent philosophy in how they want to provide support to their student-athletes.
Figure 6. The empirical DCDE model of Umeå athletics.
Figure 7. The empirical DC-ESF model of Umeå athletics.
Study IV

Introduction and Aim
This study combines the holistic ecological and holistic developmental approaches (Henriksen & Stambulova, 2017; Wylleman et al., 2013; Wylleman, 2019) to explore how a DCDE facilitated student-athletes’ transition to a Scandinavian university. A key aspect of a successful DCDE is supporting student-athletes in the process of developing and maintaining optimal DC balance (Stambulova et al., 2015). The objectives were to: (a) investigate the factors perceived to influence the effectiveness of the DCDE in facilitating the university student-athletes’ coping with the demands of their DC transition, and (b) analyze student-athletes’ sport and study performances, and changes in their perception of demands, coping, DC balance, and satisfaction throughout their first educational year, as additional indicators of DCDE effectiveness.

Method
The study is designed as a mixed-methods intrinsic case study with a convergent design (Creswell & Creswell, 2018) to explore the complexity and uniqueness of a specific bounded case (Hodge & Sharp, 2016), that is, a Scandinavian university-based DCDE and student-athletes’ development within it. The study is positioned within post-positivism with a realist ontology and a modified objectivist epistemology (Smith et al., 2012).

The case environment, henceforth the Alpha DCDE, was selected because it had a strong sport-study collaboration, a sport domain with an outspoken focus on DCs, and a study domain with a university bachelor program designed to support DCs. The participants were nine university student-athletes (both males and females) with a mean age of 21.0 years ($SD = 1.80$) and a DC-support team with four support providers (three males and one female) with a mean age of 41.33 years ($SD = 8.39$). The student-athletes represented the same individual sport and studied in the bachelor program, together with student-athletes from other sports.

With inspiration from the holistic ecological approach (Henriksen & Stambulova, 2017) and the DC-ESF working model (Henriksen et al., 2020) the case was investigated using multiple sources of data. Semi-structured interviews and documents analysis were complemented by a quantitative monitoring of the student-athletes’ transition experiences. Throughout the educational year, the student-athletes completed the DC monitoring survey once a month (August-May, 10 measurements; completion rate was 95.56%). The survey was developed for the study and measured student-athletes’ perceived DC balance (Stambulova et al., 2015), demands, coping, and satisfaction in relation to sport, studies, private and social life, and financial situation during the previous week. After the final measurement, individual profiles were compiled for each student-athletes to facilitate their reflections in the interviews at the end of the educational year. The semi-structured interviews with the student-athletes focused on their experiences, balance, and perceived support during their transition to the DCDE. Semi-structured interviews were also conducted with the DC-support team, focusing on their perspectives on the environment and its functioning and on student-athletes’ situation and DC support provided. Analysis of documents, for example, webpages, social media, performance reports, PowerPoint-presentations and pamphlets about the DCDE and study program, was used to acquaint with the environment and provided information for follow-up questions in interviews.

Following our convergent design, our main data analysis consisted of (a) analyzing qualitative data by means of a coding reliability thematic analysis (Braun et al., 2016), (b) quantitative data by means of
two-level growth models (Muthén & Asparouhov, 2012), and (c) making a “joint display of data” (Creswell & Creswell, 2018, p. 220) by merging the qualitative and quantitative data in an empirical version of the DC-ESF model, acting as a summary of the case.

Results

The Alpha environment consisted of a sport science bachelor program in cooperation with a non-profit foundation specialized in the individual sport under study. Together they shared a DC-support team to coordinate the environment. The team included a sport/foundation manager, sports coach, physical coach, and the bachelor program director. The foundation employed coaches, organized training at a high-performance center, and worked to promote the sport and DCs to stakeholders. The university organized the program designed to help student-athletes in both their ongoing athletic career and in acquiring knowledge relevant to their future vocational career, with courses in physiology, psychology, leadership, economy, and marketing. Below, the findings are outlined by describing the empirical model of the Alpha environment (see Figure 8) followed by a summary of the case. A full description of the case is available in the Study IV article.

The Empirical Model of the Alpha Environment

The student-athletes’ transition demands and the environments preconditions are described first as a way to situate the transition and context in student-athletes’ development. The student-athletes experienced a challenging transition with qualitative data showing an increase in study requirements, training and competitive load, and more personal responsibility, together with occasional sport-study clashes, the need to relocate and establish a new social network, and to maintain enough economy for pursuing the DC. The quantitative data supported these findings and added to them showing the dynamics throughout the year. Study demands peaked at the onset of the year and remained the most demanding throughout the year. Sport demands decreased in the off season and then increased towards the competitive season. Financial, private, and social life demands generally remained on an average level, but with individual differences.

The preconditions included student-athletes benefitting from DC understanding and support from coaches, teachers, family and peers, access to good facilities, and DC-support team members with dual roles working across sport and study. The sport manager and physical coach were especially important as their roles transcended the environment domains: “The manager has a little more responsibility for holistic support; that all of life should come together” (coach) and “the physical coach is their teacher and their coach… he meets them in different contexts and can show understanding of both sports and study” (program director). The main barrier was financial with support providers working only part-time and student-athletes needing to work alongside sport and study.

There were several processes in the environment supporting the student-athletes’ development. Social welcoming events at the university, and physical training at the campus gym with athletes from other sports, supported student-athletes in forming a social network with friends. The student-athletes met peers within and across sports and education levels every day and there was a strong sense of fellowship among the student-athletes supporting each other. The DC-support team had daily communication with weekly meetings to synchronize sport-study schedules. A key part of the communication was using a social media group to “keep track of where they are and how they feel” (physical coach) and so that student-athletes could connect with each other to go and practice. A core DC process was integrating a theory-to-practice exchange in the student-athletes’ everyday life, by connecting course exams to athletes’ career experiences: “they apply what they read to themselves, and this becomes a kind of support by building their knowledge” (physical coach). The student-athletes not only practiced the sport, but coaches had lectures explaining the theoretical underpinning of the training to increase their knowledge. Flexibility was built into the study program with a reduced study pace and all lectures were recorded and made available online. The flexibility enabled student-athletes to be absent: “There is possibility to go away on competitions and camps without in essence missing anything” (student-athlete). The program director had monthly follow-ups to support the student-athletes’ adaptation to the academic culture (e.g., learning study techniques). The student-athletes organized and carried out most of their training by themselves or together with sport peers of their choice. To support and guide them in their development, the coaches were available as a sounding board and would sit down with the student-athletes and
discuss their plan about once a month. Group training was provided at the high-performance center in which pressure practices or annual in-house championships were common to take advantage of being a group and train on things “that are important in competition, but that are difficult to practice on by themselves” (coach).

The DC support team shared a philosophy with values and beliefs linked to a mission of a balanced and synchronized whole, explicitly saying “Even if study is organized great, and sports is organized great, doing each by itself is not enough. You must coordinate and talk to each other to share a responsibility for the whole” (program director). Key values included considering student-athletes as whole persons, believing in an empowerment approach, considering sport and study as enriching each other, and emphasizing peer exchanges and the benefit of working in groups although being an individual sport, as the path to excellence is difficult to walk alone.

In terms of student-athletes’ development and DC competences, transitioning to the environment was described as a “rich learning experience” (student-athlete) related to self and sports. Coming to university, the student-athletes needed to take more responsibility for balancing their DC lifestyle. By taking part in the everyday activities infused by a sport-study exchange and the philosophy of the DC support team, the student-athletes started to recognize that to optimally develop they needed to consider their needs across their levels of development, by at times doing something other than sport or study to feel well. This shift towards a more holistic attitude added to their competences of planning, prioritizing and self-discipline and helped them balance their DC.

As for environment effectiveness, the performance data showed that the student-athletes earned 95% of their study credits and when comparing their competitive sport results the season before with the season after entering the environment the effect sizes indicated a moderate increase in sports performance (Hedges gα = 0.48). The two-level growth models showed a credible positive linear change for balance and coping, but not for satisfaction and demands, on the within-person level, meaning the perceived levels of demands did not change, but the student-athletes’ ability to cope improved and they became better at balancing their DC, while remaining the same level of satisfaction. Interview data supported these conclusions.

Summary of the Case

There was convergence across the sources of information with both qualitative and quantitative data showing that the Alpha DCDE was successful in supporting their student-athletes’ development. Based on the empirical model, the case of the Alpha environment and student-athletes’ development therein can be summarized as: (a) the student-athletes’ experienced a dynamic and challenging transition with holistic demands, (b) they benefitted from DC understanding and support from coaches, teachers, family and peers, and access to good facilities, (c) a DC-support team integrated the efforts of sport and study networks and had support providers with dual roles working across the environment domains, (d) sport and study domains were connected with each other to provide synergies in student-athletes’ everyday life, (e) student-athletes took a personal responsibility for their everyday life and planning, facilitated by flexibility in sport and study and interactions with coaches, (f) the DC-support team shared a philosophy targeting empowerment of the whole person, and believed in the value of education and peer exchanges, (g) student-athletes developed their DC competences and moved towards a holistic attitude to development, (h) they earned their study credits, performed well in sport, felt satisfied, and improved in their ability to balance their DC, and (i) there was a good fit between student-athletes’ needs and the support provided.

Contribution

This study adds to the literature by bridging the gap between transition and environment research in exploring a mixed-methods procedure to integrate the holistic ecological and the holistic developmental approaches. By integrating the approaches, the study explicitly shows the fit between student-athletes’ needs and corresponding support in a DCDE. The Alpha DCDE case can be used as an inspiration for DC practitioners to develop a support provision that is informed by student-athletes’ DC development and integrates the whole person and whole environment perspectives. This study provided a key contribution to developing the DCA framework (forthcoming).
Figure 8. The empirical model of the Alpha environment.
General Discussion

With this PhD Project I set out to explore the DC experiences of Swedish university student-athletes from the holistic developmental and ecological approaches, to forward the research basis for athletes’ DCs at university level in Sweden, and by means contribute to the development of the support provision being established. Below I would like to first elaborate on what the holistic developmental and ecological approaches bring to our understanding of athletes’ DCs and the associated contributions of this Project, and then what it might mean to make a synthesis of these approaches. After this and in line with the second aim of this Project, the DCA framework is presented that integrates a whole person, whole career and whole environment perspective emphasizing a process of developing and maintaining optimal balance in the DC pathway.

The Holistic Developmental Approach and Contributions of the Project

The holistic developmental approach (Wylleman et al., 2013) gives researchers and practitioners a view of the athlete as a whole person and shows that student-athletes are going through difficult transitions and scenarios, and often multiple ones at the same time, throughout the DC. The approach outlines a lifespan – or whole career – perspective, embodied in the holistic athletic career model (Wylleman, 2019), pointing the attention towards athletic, academic, psychological, psychosocial, financial and legal levels in student-athletes’ development, and how these levels interrelate throughout the athletic career. This stimulates a holistic developmental perspective in which the whole of the person is considered within the process of life itself, emphasizing that the path towards performance success is intertwined with developing as a person (Preston & Fraser-Thomas, 2018), and that sporting experiences are seen as resources for life rather than life itself (Stambulova & Wylleman, 2014; 2015). This PhD Project supports the whole person perspective showing consistently throughout the studies that student-athletes experience demands across their athletic and non-athletic levels of development (Study I-II; Study IV).

Beyond the above, research grounded in the holistic developmental approach add to the understanding of athletes’ DC pathways in two distinct ways; what student-athletes’ need to contend with in the DC pathway, and what coping resources and strategies the student-athletes need to succeed.

The GEES project (Wylleman et al., 2017) represented a shift in our understanding of what athletes’ need to contend with in the DC by moving beyond studies who previously separated student-athletes’ demands into different developmental levels (e.g., Brown et al., 2015; Debois et al., 2015; Morris et al., 2015; Tekave et al., 2015) to encapsulating demands in DC scenarios. A key contribution of this PhD Project was showing the relevancy of DC scenarios developed in GEES/across Europe for the Swedish DC context (Study I) and furthermore by continuing to explore the integration of athletes’ demands in DC scenarios in Study II. Study II extended the previous research by suggesting that balancing time and effort to fulfill commitments across life areas, that is, maintaining optimal DC balance (Stambulova et al., 2015), is the overarching challenge for student-athletes. Study II forwarded the understanding of DC scenarios by suggesting an empirically based definition separating DC scenarios from career transitions (Stambulova et al., 2021). DC scenarios were defined as pre-transition situations constituting a combination of student-athletes’ circumstances that compromises their DC balance. Such scenarios are characterized by coinciding commitments across developmental levels, and student-athletes’ need personal resources, support, and coping strategies to maintain their optimal DC balance (Study II). These findings and the updated conceptualization of DC scenarios adds to our understanding of the change-processes that athletes need to cope with to succeed in the DC, beyond the already identified normative, non-normative and quasi-normative career transitions (Stambulova et al., 2021). Study II also suggested a
taxonomy of DC scenarios with four types. Based on this taxonomy, the scenarios identified and explored across Study I-IV and related research is summarized in Table 2 showing the scenario-types and examples of scenarios that student-athletes may face in their DC.

Based on the available group-level research, and focusing on the Swedish university level, most of the student-athletes seems to cope average-to-good with their DC scenarios. Average-to-good coping has been found for scenarios such as when exams conflict with a competitive phase (i.e., maintain study type) and catch up missed days of study (i.e., maintain sport type). A finding that has been repeated across studies (De Brandt, 2017; Study I-II) is that student-athletes cope the least good (but still average) with the financial and social life scenarios. Study II also showed how student-athletes struggled when crucial events in both sport and study coincided, or when trying to finalize their degree project. These findings suggest that student-athletes need more help with managing the maintain sport and study and the maintain personal life scenario-types, beyond how to manage maintaining sport or maintaining study.

Table 2

<table>
<thead>
<tr>
<th>Scenario-type (core challenge)</th>
<th>Description of scenario-type</th>
<th>Scenario examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain sport and study</td>
<td>Student-athletes’ circumstances require several shifts in daily life.</td>
<td>Switch between sport/training and study/lectures in everyday life. Integrate training and study load with a spare-time job to finance the DC. Crucial events in both sport and study coincide leaving minimal room for anything but sport and study.</td>
</tr>
<tr>
<td>Maintain study</td>
<td>Student-athletes’ circumstances require prioritizing sport but also maintaining study.</td>
<td>A sport event coincides with exams. Exams conflict with an important competitive phase. Travel/be away for camps or competitions and maintain study. Prepare for a competition/game and in parallel continue to maintain study load.</td>
</tr>
<tr>
<td>Maintain sport</td>
<td>Student-athletes’ circumstances require prioritizing study but also maintaining sport.</td>
<td>Catch up missed days of study after a camp or competition. Prepare for an exam and in parallel continue to maintain training load. Finalize degree project and continue to train and compete.</td>
</tr>
<tr>
<td>Maintain personal life</td>
<td>Student-athletes’ circumstances require prioritizing sport and study but also maintaining personal life.</td>
<td>Have a social life along with sport and study. Engage in a romantic relationship alongside the DC.</td>
</tr>
</tbody>
</table>

Note. Scenario-types and descriptions from Study II, and examples summarized from findings in De Brandt (2017), Study I, Study II, Study IV, and Wylleman et al. (2017). Three scenarios from the GEES project are outside of the definition of DC scenarios used here (see more in Study II).

In line with previous research (Debois et al., 2015; De Knop et al., 1999; Stambulova, et al., 2015), this PhD Project supports the key role of personal resources, also referred to as DC competences (De Brandt et al., 2017; De Brandt et al., 2018; Linnér et al., 2016; Study I; Wylleman et al., 2017), in student-athletes’ coping. In terms of what DC competences the student-athletes need to succeed, this
Project made some empirical contributions. Study I, as part of the GEES project (Wylleman et al., 2017), showed the importance and possession of DC competences among Swedish university student-athletes. A conclusion from Study I is that the university student-athletes found many DC competences as important for coping successfully, supporting the literature (De Brandt et al., 2018; MacNamara & Collins, 2010; MacNamara et al., 2010a, 2010b) in that student-athletes need a range of coping resources and strategies to be successful (see also forthcoming synthesis of student-athletes’ DC competences and coping strategies). In line with previous research (Aquilina, 2009; Brown et al., 2015; Burlot et al., 2018; Cosh & Tully, 2014; Fryklund, 2012; MacNamara & Collins, 2010; McKenna & Dunstan-Lewis, 2004), findings across all four studies in this Project supported an emphasis on good planning, organization and time-management, and the ability to prioritize, as key personal coping resources and strategies for student-athletes. Study IV added to the understanding of student-athletes’ coping resources and strategies showing how an increased holistic career awareness added to the student-athletes’ competences of planning, prioritizing and self-discipline and helped them balance their DC. Holistic career awareness here meant an understanding that development occurs simultaneously across different levels, and the student-athletes started to recognize that to optimally develop they needed to consider their needs across different levels and at times do something other than sport or study to feel well (Eccles & Kazmier, 2019; Study IV).

In similarity with previous research (De Brandt et al., 2017), findings in Study I suggested that Swedish university student-athletes experienced an average-to-good possession with a general need to develop their DC competences to cope (even more) successfully. Especially important to develop were ability to cope with stress, importance of rest and recuperation, ability to prioritize; belief in own ability, use time efficiently, self-discipline, and make own responsible choices (Study I). Readers should keep in mind that in these studies (Study I; De Brandt et al., 2017) a majority of the student-athletes coped average-to-good based on their current possession of DC competences and the general need to develop competences are based on group/mean-level comparisons in which the need for the individual is difficult to infer. Rather, as part of a professional DC practice, practitioners should keep in mind that what DC competences and coping strategies the student-athletes need to succeed is dependent on who they are, what they currently need to contend with, and in which environment they are embedded.

The Holistic Ecological Approach and Contributions of the Project

Previous research into how to optimally support student-athletes points towards the importance of DC support compensating and/or complementing the student-athletes’ own resources in an autonomy-supportive way (Stambulova & Wylleman, 2019), with an emphasis on support providers valuing DCs and providing flexibility (e.g., Knight et al., 2018; Ronkainen et al., 2018). The holistic ecological approach (Henriksen & Stambulova, 2017) stimulates researchers and practitioners to look beyond the individual student-athlete and consider how the whole environment and social processes within it can facilitate, or hinder, DC development. The approach provides a conceptualization of the DCDE (Henriksen et al., 2020; Morris et al., 2021) pointing the attention towards the various components of the DCDE and how they interrelate in the support provision to student-athletes.

A key contribution of this Project is that the case studies conducted (Study III; Study IV) have been part of establishing the usefulness of the holistic ecological approach in DC research. Integration of efforts with a clear support structure has been identified as key for optimized DC support (e.g., Defruyt, 2019; Knight et al., 2018; Pink et al., 2015). Research into well-functioning DCDEs (e.g., Study III; Henriksen et al., 2020) support this and adds to it by describing the support structure, the role of support providers, and how a DC philosophy among the support providers facilitated integration of efforts and aligned the support provided by different people toward the core mission of the environments. This resonates with previous research into the functioning of successful athletic talent development environments (Henriksen, 2010; Larsen et al., 2013).

Study III was part of the ECO-DC project and it added to the cross-case analysis (Storm et al., 2021) in which the essential features of DCDEs across Europe where identified (Study III, De Brandt et al., 2019; Henriksen et al., 2020; Korhonen et al., 2020; Nikander et al., 2020; Ramis et al., 2019). The essential features of DCDEs (Storm et al., 2021) guide ecological DC practice towards optimizing the
holistic structure of the environment and developing a shared DC philosophy among the support providers. The essential features of DCDEs are well described by Storm et al. (2021; see also the Introduction). Here, I provide a brief summary: Holistic structure implied the presence of a central entry point for DC support through a dedicated DC-support team responsible for coordinating sport and study, integration of efforts across the environment, and a clear understanding of DC issues and support from DC support providers, family, coaches, teachers, and peers. Holistic structure also included access to expert support, and to role models and/or mentorships from which student-athletes could learn. A shared philosophy within a DC-support team included whole person and empowerment approaches by taking an interest in student-athletes’ experiences across domains (e.g., coaches caring about studies) and by supporting them in developing DC competences to manage their DC in an autonomous way. Support staff recognized that student-athletes required individualized solutions and therefore provided sport and/or study flexibility. They also cared for athletes’ mental health and wellbeing and maintained an open and proactive approach to the continued development of the environment (Storm et al., 2021).

The two DCDEs explored as part of this PhD Project (Study III; Study IV) provided in-depth descriptions of well-functioning DCDEs from which DC practitioners can learn in the process of optimizing their environments. In the process of optimizing a DCDE, practitioners should keep in mind that findings across different environments (e.g., Study III; Henriksen et al., 2020; Nikander et al., 2020) indicate that all environments are unique, and as such there is no single role model in how to organize a DCDE, rather they can be organized in different ways (Morris et al., 2021). Independent of how they are organized the research shows that effective DCDEs share essential features (Storm et al., 2021). Study III and IV showed the relevancy of the essential features of DCDEs (Storm et al., 2021) for the Swedish DC context. A shared finding across Study III and Study IV, with relevancy for the Swedish DC context, is that they both pointed towards the importance of coaches in the daily DC support to student-athletes to help them maintain optimal DC balance (Stambulova et al., 2015).

What it Means to Make a Synthesis of Approaches

A central idea of this PhD Project is to make a synthesis of the holistic developmental and ecological approaches (Henriksen & Stambulova, 2017; Wylleman et al., 2013) - but what does this mean? At the very basic level it means taking into consideration both the individual student-athlete and the environment in which this student-athlete is a part of. In terms of support, it means integrating a whole career, whole person, and whole environment perspective. This means taking into consideration the interplay between the person, ongoing career-situation, and environment the person is in, and working to make synergies between individual’s needs and environment functioning, as exemplified in Study IV.

Study IV integrated the holistic ecological and developmental approaches, and in doing so the study made a key contribution by situating the environment in the student-athletes’ development and extending the previous research (e.g., Study III; Henriksen et al., 2020) by explicitly showing the fit between student-athletes’ developmental needs and support provided in a DCDE. Study IV showed that effective DCDEs work to meet student-athletes’ needs by helping them develop DC competences to deal with the developmental demands and maintain their DC balance (Stambulova et al., 2015). These findings stimulate practitioners to move from generalized DC support to contextualized and coordinated support within DCDEs based on student-athletes’ needs and aimed at helping them balance their DC (Study IV).

For the applied purpose in this PhD Project and in line with the discourse of athlete career research (Stambulova et al., 2021), a synthesis implies combining ideas from theoretical frameworks, research findings, and the Swedish DC context, in a framework that can inform DC practice. This framework is presented next.

The DCA Framework

This PhD Project was initiated to forward the research basis for athletes’ DCs at university level in Sweden, and by means contribute to the development of the professional DC practice being established.
To contribute to such developments a key need identified was to merge the developments of the ongoing research in a framework that could guide DC assistance.

The DCA framework (Linnér & Stambulova, 2021) is developed as a synthesis of Studies I-IV, the European research projects GEES (e.g., De Brandt, 2017; Defruyt, 2019; Wylleman et al., 2017) and ECO-DC (e.g., Henriksen et al., 2020; Storm et al., 2021), and related DC research (Stambulova & Wylleman, 2019). The framework links key ideas and concepts from the holistic developmental (Wylleman, 2019) and the holistic ecological approaches (Henriksen & Stambulova, 2017), and situates this in the Swedish higher education and sports context through the Swedish DC guidelines (Swedish Sports Confederation, 2018a). A support that integrates a whole person, whole career, and whole environment perspective is emphasized.

The DCA framework (see Figure 9) is structured as a pyramid embedded in the national DC context (Swedish Sports Confederation, 2018a), meaning the conditions for DCs in the country, and the local DCDE (Study III; Henriksen et al., 2020), meaning the conditions and functioning of the environment in which the student-athlete is a part of: The environment and context are dynamic and changing with time indicated by the surrounding timeframe. The framework sets the aim of professional DC practice to be helping student-athletes develop and maintain optimal DC balance (Study II; Study IV; Stambulova et al., 2015) to facilitate their striving for career excellence (Stambulova et al., 2021). That is, supporting a healthy, successful, and long-lasting career in sport and life by helping student-athletes reach their sport and study goals, live satisfying private lives, and maintain health and wellbeing. Maintaining DC balance is not without challenges, and the framework points the attention to the DC scenarios and transitions capable of compromising balance (e.g., Study II; Wylleman et al., 2017). The framework guides DC support providers in helping student-athletes to choose the most efficient coping strategies (i.e., actions taken; Affermann & Stambulova, 2007) to meet their challenges and maintain their DC balance, based on their current resources and barriers. Current resources and barriers include DC competences (i.e., intrinsic factors or strengths to a person; Study I; Study II; De Brandt et al., 2018) and DC support (i.e., social support and help from others; Study III; Knight et al., 2018; Defruyt, 2019), or lack thereof, within a DCDE (Storm et al., 2021). DC support providers should keep in mind that depending on the person, situation, and environment, what sometimes is a coping resource, for example, athletic identity, motivation, or flexibility, can also be a barrier to deal with (Stambulova, 2009). The outcome is expressed in student-athletes’ becoming “winners in the short- and long-run” (Lindahl et al., 2011; Stambulova et al., 2015) meaning being able to manage the challenges of a DC lifestyle and feeling well-prepared for the life after sports (Park et al., 2013), in this sense embedding the DC pathway as a resource for the life career of the person.

The DCA framework stimulates DC support providers to consider DC assistance in relation to four target areas. These include optimizing student-athletes’ DC awareness and competences, optimizing the everyday DC support based on student-athletes’ needs, optimizing the DCDE structure and philosophy, and optimizing student-athletes’ conditions for pursuing DCs. A practical example of the framework in action is outlined below and recommendations to DC support providers are provided in relation to each target area in the Practical Implications section.

To stimulate an evidence-based practice, the DCA framework is also presented in a version that includes key research findings in relation to each component (see Figure 10). Key findings from previous research included here are the essential features of DCDEs (Storm et al., 2021), DC scenarios (Study II; Wylleman et al., 2017) and transitions (Stambulova et al., 2021), and the national DC context from the Swedish DC guidelines (Swedish Sports Confederation, 2018a). To support evidence-based practice a synthesis of the literature pertaining to student-athletes’ DC competences, coping strategies, and DC support is made below.

Making a synthesis of findings in Study I-IV and the previous literature (Aquílna, 2009; Brown et al., 2015; Burlot et al., 2018; Cosh & Tully, 2014; Debois et al., 2015; De Brandt et al., 2017; De Brandt et al., 2018; Fryklund, 2012; MacNamara & Collins, 2010; MacNamara et al., 2010a, 2010b; McKenna & Dunstan-Lewis, 2004; Stambulova et al., 2015) key personal coping resources/DC competences can be summarized. Key DC competences for student-athletes include:
- self- and holistic DC awareness, meaning the ability to recognize one’s emotions and values/beliefs, and one’s strengths, limitations, and holistic needs across developmental levels, including caring for own health and wellbeing,
- organization, time- and career management with adaptability, meaning being able to plan and structure time and effort to meet short- and long-term goals including adapting the plan to circumstances/having back-up plans,
- dedication, work ethic and self-discipline, including committing to what needs to be done to reach goals,
- social awareness and skills, meaning showing understanding for others (for example teachers’ situation) and having the ability to communicate, negotiate and forming relationships and working alliances from which one can learn, and dealing with conflict,
- responsible decision making, meaning taking personal responsibility and making constructive choices about own DC,
- previous DC and life experience, and
- personal health and wellbeing.

Continuing the synthesis based on the above-mentioned literature (e.g., Brown et al., 2015; Study II), key coping strategies supported in the research includes:

- being proactive and planning in advance, including having an integrated planning for sport, study, and recuperation in which difficulties can be predicted,
- making shifts in prioritizing and focusing on the present, meaning prioritized role and relevant tasks are given more time and efforts whereas the other role and relevant tasks are set aside, but still maintained to the degree of allowing a quick comeback when necessary,
- communicating needs and seeking social support/help,
- working persistent towards goals with patience,
- learning from experience, and
- focusing on recovery.

Finally, drawing from the supportive processes in DCDE (e.g., Henriksen et al., 2020; Study III; Study IV; Storm et al., 2021) and research into DC support (Brown et al., 2015; Defruyt, 2019; Knight et al., 2018; Pink et al., 2015; Ronkainen et al., 2018; Saarinen et al., 2020) key actions by support providers can include:

- increasing student-athletes’ and stakeholders’ awareness about DCs, DCDEs and available support, by for example increasing DC understanding among sport and study staff to minimize barriers, and clarify student-athletes’ rights and obligations (especially relevant for legal agreements for study flexibility at the university),
- recognizing student-athletes’ needs and providing support in response, for example study or sport flexibility,
- providing guidance for informed decisions, by helping student-athletes navigate their DC pathway based on an empowerment approach,
- embedding DC balance in daily dialogue, by helping student-athletes to integrate their sport and study load in a sustainable lifestyle, especially important by coaches as they meet student-athletes on an everyday basis,
- monitoring student-athletes’ health and wellbeing and referring to expert support on a needs-basis (e.g., physiotherapy or sport psychology), and
- organizing the environment to facilitate knowledge exchanges between student-athletes through for example role modelling or mentorships.

To illustrate the DCA framework in action, a practical example follows. Imagine that a student-athlete comes to you, a DC support provider, and needs help with how to manage an upcoming competitive phase in their athletic career that conflicts with important exams in their academic development.
Guided by the DCA framework, you know that student-athletes are successful when they maintain their DC balance, and this is a part of striving for excellence in sport and life. You explain this to the student-athlete, emphasizing that the DC is part of the person’s life development and that DC balance does not mean an equilibrium or that student-athletes always should spend equal amount of time or effort on sport and study, rather, DC balance is dynamic and idiosyncratic. Maintaining DC balance is about reaching sport and study goals, living a satisfactory private life, and experiencing health and wellbeing. To do that, the DCA framework shows that student-athletes need efficient coping strategies to manage scenarios and/or transitions that may compromise their DC balance. In dialogue with the student-athlete you start by exploring what makes the upcoming competitive phase challenging for the student-athlete, being tentative to the sport and study preconditions for the individual. Together, you identify the core challenge, for example, maintaining study, when needing to prioritize sport. Following the DCA framework, the next step is to guide the student-athlete in determining what to do, that is, to identify coping strategies. To do that, the framework guides you to explore the person’s competences, that is, their strengths and weaknesses as a person, and the available support (or lack thereof) in their network of people in the DCDE. This exploration aims to identify what currently helps or hinders the individual in managing the challenge and supports the decision on what strategies to choose to cope successfully. From here, as a DC support provider, you adjust your response based on the situational needs of the student-athlete. Maybe you identify a need for the person in developing their competences, for example, ability to plan and communicate needs in advance, or that there is a lack of support in their network, for example, teachers or coaches not providing appropriate flexibility when needed. Being part of a dedicated DC support team in your DCDE, maybe the solution is as simple as guiding the student-athlete to the right people in the environment. Or maybe, based on talking with this student-athletes and others, you recognize that there is more to be done in the environment and initiate work to further develop, for example, the awareness and support for DCs across the sport and/or study staff, as part of optimizing the DCDE as a whole.

In conclusion, the DCA framework sets the aim of DC support to be helping student-athletes maintain optimal DC balance by managing their challenges and continue their striving for excellence in sport and life. The DCA framework stimulates DC support providers to consider DC assistance in relation to four target area, including optimizing student-athletes’ competences, the everyday DC support, the features of the DCDE, and local/national conditions (see Practical Implications for more). The DCA framework can be used to guide individualized or group-oriented interventions from a preventive-supportive perspective, through for example, counselling as in the example above, or workshops, seminars, and educational modules, or as part of a crisis-coping educational intervention (Stambulova & Wylleman, 2014).
Figure 9. The DCA framework.

Aim: Helping student-athletes develop and maintain optimal DC balance to facilitate their striving for career excellence.
Figure 10. The DCA framework with key research findings in relation to each component.
Methodological and Ethical Reflections

Below, I start with a personal reflection on entering the athlete career research topic and proceed with methodological reflections and major lessons learned, followed by limitations to this PhD Project, and ethical reflections.

I came from previous research and practice focusing on self-talk and golf performance during my bachelor and master education which reflected my personal development and interest based on my own athletic career. Doing both qualitative and quantitative as well as mixed methods approaches appealed to me already back then. My master thesis was a type of quasi-experiment with a qualitative post-experiment debriefing. Although having had career development and transitions as a topic in my undergraduate education which inspired me to incorporate a developmental perspective into my professional philosophy, taking the step towards conducting research on athletes’ careers was challenging as the area spans several interrelated sub-topics, a variety of research methods, and connects with several other topics within sport and exercise psychology, for example, talent development, cultural sport psychology, and applied sport psychology. To grasp this multitude of research as a novice in the field was, and still is, challenging. It did however also stimulate me to develop a wide range of competences which I think is beneficial but require time. I consider this PhD Project to be a good first step.

Methodological Reflections and Lessons Learned

There are several advantages of this PhD Project. It answers the call for research combining, or making synthesis of, the holistic developmental and holistic ecological approaches (e.g., Stambulova et al., 2021). Making a synthesis provides a basis for an in-depth and rich understanding of athletes DCs at university level in Sweden from multiple yet complimentary perspectives. The Project has been embedded as part of a developing DC discourse in Europe (Stambulova & Wyller, 2019) with Studies I and III part of European level projects, which in turn has enabled the transfer of international DC knowledge into the Swedish DC context, and vice versa. Studies II and IV made use of the knowledge learned from the European projects and related research and forwarded the understanding of key ideas/concepts, for example, improving the understanding of DC scenarios (Study II) and showing the link between DCDEs and DC balance (Study IV). The Project studies in this respect build logically on each other with athletes’ core challenge of maintain DC balance linking them together and with every study adding one piece of the puzzle in line with the goal of making a synthesis/framework that can guide professional DC practice. This is done using a variety of scientific methods yet theoretically and methodologically commensurate (Creswell & Creswell, 2018; Gibson, 2019).

I believe conducting the PhD Project in cooperation with the international and national DC community including both researchers and practitioners has greatly benefitted both the Project and my development. As a developing researcher in the field, such collaborations have been very useful for my understanding of athletes DCs by taking part in, for example, practitioner discussions and the challenges they and their student-athletes face, in Sweden and across Europe. A PhD-student is expected to develop independence as a researcher. I acknowledge that being part of other research projects as a PhD-student, there is a risk that working tasks provided overshadow such opportunities for professional development. I have not experienced that risk. I also think the goal of independence as a researcher can be discussed. To develop, or demonstrate, intellectual autonomy is important, but this is not manifested as independence or doing things by yourself, or even coming up with all ideas by yourself. I believe this is manifested, in ecological words, by being embedded as an intellectual partner in a research team or project and engaging in critical discussions with researchers or co-authors. And such discussions there has been plenty of! I also think this is why I feel so privileged to have been part of these projects, because in all projects we have discussed methodological and conceptual issues, shared experiences, and learned from each other. Being involved in international research projects has enriched, not limited, my development. Through it I have gained a better understanding of the scientific community, how researchers collaborate in practice, and not the least gained increased understanding about my own strengths, weaknesses, and
knowledge gaps in comparison to peers. At the national level it has been a privilege to take part in practitioners discussions, relate that to the existing knowledge in the field, and based on that suggests topics for educations to stimulate further developments. At times I would say that I have almost felt like an embedded scientist in the Swedish DC system yet having the complete freedom to pursue the line of research I thought would generate the most valuable knowledge. The increased understanding of the topic through discussions with researchers and practitioners has also increased my ability to make more fine-grained analysis of athletes’ DC experiences and it has stimulated conceptual developments that are part of or related to this Project. For example, the conceptualization of DCDEs and DC scenarios or the need for a guiding support framework linking different ideas together as a whole.

I do not consider myself as either a qualitative or quantitative researcher and I believe this is a strength, but I recognize that it may also be a risk. Not specializing in one method there is a risk of becoming too superficial in your methodological understanding. I acknowledge that I am more confident in qualitative methods like thematic analysis (Braun et al., 2016) and the PhD Project relies more on this type of research, but as a researcher I want to continue pursuing different and complementing methods in the future. In relation to this, I acknowledge the importance of being tentative to ontological and epistemological positioning. A researchers ontological and epistemological position provides a guidance towards what can be known, and how one might know this. What supports our claims about the world (i.e., the evidence) consequently also becomes different dependent on our position. A post-positivist, trying to claim approximations of truth, is prone to value aspects of validity and reliability of findings, through for example, statistical testing of hypothesis in applying the hypothetico-deductive method (Lewens, 2015), or in qualitative post-positivist research through inter-rater reliability to reach consensus or member checking for verification of interpretations and replicability (McGannon et al., 2021). The relativist in search of subjective meaning making in contrast can reject the notion of a fixed list of criteria applicable to all forms of qualitative research and instead consider rigour/trustworthiness/credibility as socially constructed and that it can change depending on purpose, researchers and participants, methods, and the study’s epistemology (McGannon et al., 2021).

A key lesson learned throughout this process is the ability to shift between individual and environment/ecological perspective (Henriksen & Stambulova, 2017). Any researcher stepping into ecological research I think will acknowledge the challenge of shifting the perspective. Simplified, it means shifting from putting the research focus towards what happens inside a person to what happens in-between people. Having not done ecological research before, this has been an analytical exercise which has contributed to my development as a researcher, being able to shift between the student-athletes ability to cope, to how the DCDE function, and indeed how these two aspects can interrelate and even enrich each other.

I resonate with Hodge and Sharp (2016) when summarizing that “case studies are hard, difficult, challenging and a little frightening at times, but also incredibly rewarding. Your ideas, thinking, interpretations and writing skills are brutally exposed for examination by the reader” (p.70). Analyzing the data, making the empirical models, and writing the case descriptions included in this Project (Study III-IV) has been hard, time consuming, and so worth it! There are two interrelated challenges that I believe has made this hard: understanding the boundedness of the case and writing a thick/comprehensive description of the case. A case is generally considered as a specific phenomenon selected for study that is bounded in time and place (Hodge & Sharp, 2016). A challenge in studying a DCDE is to understand what is case and what is context, in other words, what is part of, or not part of, the environment. Key to this end are the working models used to guide the research (Henriksen et al., 2020) as these are instrumental and help to provide such boundaries. The working models point our attention to different and interconnected aspects of the environment when collecting the data, provide a coding frame in the analysis (Braun & Clarke, 2019), and a logic in how to present and summarize the findings by transforming the working models into empirical models. Making the empirical models is a cyclical process of going back and forth in between data transcripts, theme development, the model, and the corresponding case description. In Study III and IV, I developed several drafts of empirical models. The comprehensibility and alignment between the data, models, and case description was then critically discussed and optimized in several rounds of a critical friends approach in which co-authors challenged interpretations and ideas with the aim of providing a comprehensive, but not too heavy illustration and description of the case. As case studies are expected to capture the complexity of the single bounded case (Hodge & Sharp,
2016), making thick/comprehensive descriptions (Tracy, 2010; McGannon et al., 2021) including deciding on what to show and what to tell is still very challenging. This is guided by the research aim, but when the aim is to provide a holistic description of an environment, as in Study III, the challenge is still to make fine-grained decision on what to include and exclude, or what to highlight and what to mention. Making such descriptions has been a huge challenge and it has really pushed and developed my ability to write condensed but meaningful scientific text, which in no way had turned out the way it did without the comments and support from co-authors.

From doing especially the case studies that involved a lot of empirical data, I have also experienced how writing is an integrated part of the analysis. Writing the findings is commonly identified as the final step in a thematic analysis (Braun et al., 2016) and I have followed such steps, making major parts of the analysis before turning to writing as the final step which for me inevitably has meant also going back to earlier steps of the analysis and improving sub-sections of the analysis based on improved understanding when writing it. I see the benefit of starting to write sooner in the process. With this I do not mean any steps in the analysis should be skipped or that writing should not be the final step, but rather that writing rough sketches or part-drafts of the analysis alongside earlier steps can help to clarify meaning and in a way be used as a type of rigor-technique, by validating the progression of the analysis and showing to yourself how the generated themes and ideas fit together.

Another lesson learned is the usefulness of follow-up interviews. This is a lesson also discussed with fellow PhD-students (Ekengren, 2020) and something I think I will incorporate in future research project designs to enrich data and rigor. As for my project I see the benefit of this through the member checking (Birt et al., 2016) in Studies II-IV in which it was used to explore how the findings resonated with the experiences of the participants to enhance trustworthiness.

A weakness that sometimes is highlighted for qualitative and/or case study research, or research that in general targets a specific group of individuals or contexts, is that the information gathered is unique and idiosyncratic which limits the generalizability of the findings (Hodge & Sharp, 2016). Smith (2018) rejected such a view, pointing researchers’ attention to various ways in which qualitative research findings can be generalized. The findings of this Project can be generalized in naturalistic and analytical ways. Naturalistic generalizability refers broadly to when research findings resonate with the experiences of the reader (Smith, 2018). In relation to this project, naturalistic generalization may, for example, appear when readers outside of Scandinavia resonates with the challenges and solutions in the Swedish DC context, and in turn get inspiration or ideas for how to work in their respective context. Naturalistic generalizability may also appear inside the Swedish DC context, with practitioners of various DCDEs at university or upper-secondary level learning from the supportive practices of the DCDEs investigated. I also believe the approach taken in this PhD project can provide analytical generalizability (Smith, 2018), showing how various frameworks and concepts interrelate in the DC research, and inspiring fellow DC researchers to think about new ways of integrating the holistic developmental and ecological approaches. Analytical generalizability may also appear if, for example, the DCA framework is found useful in contexts beyond high-performance sports, for example, musicians, actors, or the like, trying to combine their development alongside involvement into education or work.

Related purely to the quantitative parts in this Project are the lessons learned about the limitations of arbitrary metrics (Andersen et al., 2007), the importance of effect sizes and moving beyond p-values, and the benefits of within-person analysis (Stenling et al., 2017). The importance of effect sizes relates to noll-hypothesis-significance testing and many years of debate about what this statistical model of analysis tells us (Orlitzky, 2012). Central to this debate is the interpretation of p-values, and that such a value provides a kind of “cut-off” value deciding whether something is meaningful or not, and the need to report effect sizes to understand magnitude of effects (Andersen et al., 2007; Ivarsson et al., 2015). In short this implies that you should not only provide support for the existence of a difference/relationship (i.e., the p-value), but how big/strong that difference/relationship is (i.e., the effect size), to be able to make conclusions as to the meaningfulness of such a finding. For example, there might be a significant difference, but it is so small that in context of real life it does not matter, or the other way around, that there might be a small, statistically insignificant, effect, that in context of real life is very important. In this project I have tried to stay in tune with this and the recommendations of APA (2020) by reporting effect sizes in Study IV, and in Study I that relied solely on effect size measures albeit based on arbitrary metrics (Andersen et al., 2007). The benefit of within-person analysis (Stenling et al., 2017) is in essence
encapsulated in the idea that all people do not develop in the same way, and the changes at the individual level (i.e., the within-person variance) are important to take into consideration in the analysis. This is not the case in many population-based statistics (e.g., repeated measures ANOVA) in which the unique experiences of different individuals are aggregated, or reduced, to a mean which is intended to reflect all the participants, but typically only reflects a few, or even any, of the participants’ real experience. This is also known as the “Average Joe phenomenon” (e.g., Ivarsson & Andersen, 2016) meaning in many analyses the data is reduced to an unknown level of participant, the Average Joe, from which (potentially flawed) conclusions about the real-world participants are inferred. With this lesson learned, Study IV targeted within-person change. Although never reported in the final article for Study IV, but in the early steps of the analysis an intra-class correlation analysis showed that 86% of the student-athletes’ perceptions of balance were explained at the within-person level, meaning balance is idiosyncratic and within-person analysis appropriate.

The Project Limitations

Below, I summarize key limitations to the overall work, but readers should keep in mind that each study has limitations (see Studies I-IV).

The PhD Project and related studies do not reflect all the varieties of sport and study conditions across the country. Different sports and different educational programs provide different conditions for the DC. A student-athlete in an individual sport studying in a sport science program might have different pre-conditions for combining sport and study than a team sport athlete studying medicine. The same can be said about comparing the situation for an athlete involved in a sport where there is a high-performance center run by a sports federation in close collaboration with a university and an athlete studying at a university and training within a club without any formal connections to the university. Designing the Project, it has not been possible to account for all these variations, which should be taking into consideration when interpreting the findings. In relation to this I have come across two main preconditions that I think are important to mention as they can add to a more difficult DC situation for athletes: (a) the design of educational programs can limit the opportunity for individual study route planning. Especially when programs are designed with courses running only once a year, the opportunity for student-athletes to move courses and create an individual study route planning can become more problematic, and (b) the timing or flexibility of sports training. In sports where student-athletes can choose more themselves when to train, as in some individual sports, the combination can be facilitated through good planning, but in sports where training is fixed and especially when training continuously takes place at the same time as lectures, which can be the place in some team sports, the combination is more dependent on study flexibility and study-autonomy of the student-athlete.

Another limitation is that there are more female than male participants in Study I and Study II. Previous research point towards a potential difference between males and females in their coping resources and strategies. Females, for example, have been shown to be more organized (De Brandt, 2017) which should be taken into consideration when interpreting the findings.

Both DCDEs explored in Studies III and IV are organized for individual sports, and DCDEs for team sports is lacking in the literature. DCDEs can be organized in different ways (Morris et al., 2021), and they might be sports or study specific, or involve various levels of educations and/or sports. The variety of DCDEs speak to the limitation of the two cases presented, but also to the strength of the DCA framework being based on the essential features of various DCDEs across Europe (Storm et al., 2021). With the above limitations in mind, it was important that the DCA framework guided DC assistance to keep the context in mind, that is, being situated in the national and local DC context and providing guidance without pointing to the exact support needed at any given time, as this will always be dependent on the sport and study context and the needs of the individual student-athlete.

Ethical Reflections

In Study III the name of the DCDE was shared. From my perspective, the naming of the environment is not as interesting or important as how to do that without risking the integrity of the participants. This was central as an informed consent approving the naming of the environment while not revealing the
names of participants was signed (see Study III). Many contextual details are included in the paper which create a risk that a few cultural insiders might recognize the most central stakeholders in the environment. To protect the individuals with central roles, for example, the DC-coordinator or head coach, quotes from such roles were cited with generic roles shared across several individuals, like “DC-support team member” or “coach”. People with central roles were also notified about this potential risk, agreed to the circumstances, and were a part of the working group who refuted anonymity and signed the informed consent. Study IV is a good example of how the rights and integrity of participants take precedence over the research. As in Study III, a DCDE was in focus but this time the participants did not want to share the identity of the environment. Consequently, the identity was kept confidential by adjusting the text to meet the needs of both the research and the integrity of the participants.

Findings from this PhD Project and related EU projects have been disseminated continuously throughout the process, in collaboration with the Swedish Sports Confederation and, for example, through educations for Swedish sports universities and sports federations. In the EU projects, the EU commission demands dissemination of findings in, for example, project conferences throughout the project duration (known also as multiplier sport events). When in the research process is it okay to disseminate findings? Should we always wait until findings have been peer-reviewed and accepted or published? I am not sure what the right answer should be. The EU Commission seems to think dissemination is fine before peer-review. Conceptual ideas, for example, what constituted a DCDE, and empirical findings related to this PhD Project, for example, student-athletes’ need to develop DC competences, have been shared in educations before being accepted or published. For me, transparency has been the guiding light (Gustafsson et al., 2017). Every time something has been shared, there has been transparency of where we were in the research process (in preparation, submitted, accepted, published) or that it related to an ongoing or finalized project. When the same research has been peer-reviewed and published, the Swedish Sports Confederation has disseminated it within the network of DC stakeholders. This way, the possibility to critically review the research has been provided. A benefit of sharing the findings has been the possibility to critically discuss the research and its practical application with the stakeholders. I believe this also has increased the understanding of the research and theoretical frameworks among the stakeholders, supporting the usefulness of the research itself, beyond scientific publication.

Future Research

Based on the holistic developmental and ecological approaches and the idea of synthesis of approaches, avenues for future research can be identified. A logical extension of this project, and indeed a need, is to develop and test interventions based on the DCA framework and evaluate their effectiveness. Grounded in the holistic developmental approach, another extension of this project is to continue and explore DC scenarios adding to its taxonomy, and athletes’ corresponding competences and coping strategies (see Study II). Grounded in the holistic ecological approach, there is a need to continue and explore DCDEs, especially those organized for team sports. Holistic ecological research so far has mainly targeted the junior-to-senior transition (Henriksen, 2010; Larsen et al., 2013) including the inter-organizational collaborations for talent development (Mathorne et al., 2021), and the combination of sport and study (Storm et al., 2021). Future research can explore how one and the same environment can support various transitions (or educational levels). This is, for example, relevant to DCDEs supporting student-athletes’ transition from upper-secondary to university level, but such environments might also be expected to support athletes’ transition upon university graduation or athletic career termination during the study period. It is conceivable that features of environments capable of supporting various transitions can differ from those already explored (Storm et al., 2021). Related to the development of DCDEs is the role and responsibilities of various support providers. Future research can explore how DC support providers and athletes’ coaches collaborate to go beyond the aspect of study flexibility as the main DC support and target how sport-study stakeholders integrate their efforts to facilitate sustainable lifestyles for their student-athletes.

Future research can also continue to integrate the approaches. Combining the holistic developmental and the ecological approaches the DC can be seen as a journey through DCDEs (Study IV; Stambulova
et al., 2021). Such a perspective can include how the differences in structure and culture of both sending and receiving environments work as resources or barriers for student-athletes’ development, and how the environments help student-athletes in developing corresponding coping resources and strategies to balance their DC. The DC as a journey through DCDEs promotes a longitudinal approach by monitoring the student-athletes’ transition from one environment to another or exploring athletes’ career pathways through various environments, including for example, local clubs or talent development environments, high-performance environments, national team environments, DCDEs, and beyond. Such explorations will likely show that athletes at the same time in their career are involved in several environments (Sandström et al., 2016), posing questions of how the structure and culture of those environments interact to safeguard the development, improve the performance, and care for the health and wellbeing of the athletes.

Three areas of future research are especially interesting considering the ongoing development of the Swedish DC system, findings from this Project and related research, and guidelines provided in the Swedish DC guidelines (Swedish Sports Confederation, 2018a) but so far not achieved. Future DC research in Sweden can (a) explore DCDEs and their functioning at the upper-secondary education level, (b) develop a monitoring instrument based on holistic developmental and ecological approaches which can be used as a guide for the development of a professional DC practice across DCDEs at both upper-secondary and university level in Sweden, and (c) develop a digital platform of DC support based on the DCA framework and test its implementation and usefulness for student-athletes and support providers. For example, a digital education about athletes’ DCs to facilitate DC understanding across sport and study staff which would be possible to use across sports universities in Sweden.

Considering the wider area of DC research, a future trend needed is to focus much more on the sport and work combination, including DCDEs specialized in such efforts (Stambulova & Wylleman, 2019). Future DC research will likely also need to take into consideration the digitalization of education and in society in general, and what this implies for the DCs of athletes. Increased distance learning and access to education online provides additional study flexibility for athletes, but what does it mean for the everyday knowledge exchange, role modelling, and sense of fellowship for the athletes if they are not at the same physical place? Henriksen et al. (2020) touched upon this showing how a DCDE at a Danish athlete friendly university was virtually bounded through shared narratives of successful DC solutions. Future research will likely also need to help practitioners understand how to organize DCDEs to support study, training, camaraderie, and development on a distance – a type of digital environment for DCs.

Practical Implications

Throughout this PhD Project I have met and discussed athletes’ DCs with many people, including student-athletes and their support providers as well as key stakeholders. Based on these discussions, the Project findings and related research, recommendations are provided to student-athletes, coaches, teachers/educational staff, and DC support providers, as well as to the stakeholders involved in developing the DC system in Sweden.

Recommendations for Student-Athletes

The recommendations to student-athletes be to aware of DC challenges, including DC scenarios and transitions, and develop DC competences and coping strategies to cope successfully. A good effort towards such ends can include taking personal responsibility by planning in advance and identifying when sport and study commitments collide, learning to prioritize what to do and focus on the task at hand, communicating needs in good time to coaches, teachers and DC support providers, and asking for help when needed. In relation to the latter, a good idea is to take some time and understand the DCDE and what support is available (and what is not), including how and to whom to reach out to get such support. For example, who to contact if an examiner won’t provide agreed flexibility, or when in need of an expert such as a physiotherapist or sport psychologist. Finally, keep in mind that life is more than
only sport and study, and make sure to engage in activities that beyond sport or study provide relaxation and enjoyment to keep motivation, health, and wellbeing in the long run.

Recommendations for Coaches and Teachers

The overall recommendation to coaches and teachers/educational staff is to keep in mind they have a central role in athletes’ DCs and consequently for helping them balance their DC. That is, depending on their decisions and actions, student-athletes’ DC can become more, or less, difficult to manage. Keep in mind that student-athletes want to achieve in both sport and study, and when asking for flexibility they, as formulated by John in Study II: “don’t try to dodge things, but try to combine these two things in a good way”. Providing flexibility is about supporting this ambition by helping athletes pursue their sport while also taking responsibility for their life after sports and facilitating a lifestyle that commonly is regarded as demanding – that is, if not managed it can have a negative influence on their health and wellbeing.

Coaches are recommended to help student-athletes balance sport and study by taking an interest in their overall workload in sport, study, and life in general, talk with them about balance and their planning, and when necessary adjust training (or possibly competitive) schedules to balance the load.

Teachers are recommended to provide study flexibility, if such arrangements are within the legal boundaries of the university, and if student-athletes has taken their responsibility and communicated their needs in advance. Keep in mind that being flexible about minor things like group placements can be as helpful as moving or extending the due date of an exam.

Recommendations for DC Support Providers

The overall recommendation is that sport and study stakeholders collaborate and develop DCDEs, and that DC support providers (and/or DC-coordinators) use the DCA framework to guide their professional DC practice towards helping student-athletes balance their DC. Keep in mind that optimal DC balance does not mean an equilibrium or that student-athletes always should spend equal amount of time or effort on sport and study. DC balance is dynamic and idiosyncratic and from time to time requires consideration. The DCA framework stimulates DC assistance in relation to four target areas:

- **Optimize student-athletes’ DC awareness and competences.** This means helping them understand their DC with related scenarios and transitions and the DCDE they are embedded within. It also implies helping them develop their DC competences and coping strategies to maintain DC balance. Special emphasis here can be to increase student-athletes understanding of how they develop across different levels of development and how these levels interplay in challenging ways by identifying DC scenarios and transitions to be observant of and to discuss strategies for making timely adjustments to cope with the DC lifestyle including how to use the support available to them in the environment.

- **Optimize the everyday DC support based on student-athletes’ needs.** This means identifying what holistic needs student-athletes have and organizing the support to meet these needs. Be clear to student-athletes about what support they can expect, and what is expected from them in return.

- **Optimize the DCDE structure and philosophy.** This implies working with the essential features of DCDEs (Storm et al., 2021) to improve the functioning of the whole environment. This can, for example, include increasing coordination and communication by establishing a DC-support team with support providers working with “shared duties in the gray zone” between sport and study. It can also include increasing the DC understanding in sport and study staff and developing a philosophy with shared beliefs in how to provide DC support across sport and study stakeholders with, for example, whole person and empowerment approaches.

- **Optimize student-athletes’ conditions for pursuing DCs.** This means working with stakeholders to improve, for example, the student-athletes’ financial situation and establishing legal arrangements at national and local levels, for example, legal agreements for study flexibility at the university.
Practitioners are also recommended to work to create synergies between the target areas above. For example, how does the DCDE structure or philosophy facilitate student-athletes in attaining the DC competences and coping strategies they need, or how are student-athletes’ competences utilized for the benefit of peer support to each other. Such synergies represent a synthesis of holistic developmental and ecological approaches in practice.

Recommendations for Developing the DC System in Sweden

In recent years, the Swedish DC system has been expanded to include the university level (Swedish Sports Confederation, 2018a) and research findings from this and other projects have been shared in national educations to stimulate development of a professional DC practice. With the DCA framework my hope is that the professional DC practice can be stimulated even further and inspire developments across Swedish sports universities but also outside the university DC context. The Swedish gymnasium/upper-secondary DC system is in a process of potential change/re-development (Ministry of Education, 2020) providing excellent opportunity for stakeholders to consider linking the university and upper-secondary level together in a unified DC system. A unified DC system in Sweden can be to realize the DC as a journey through DCDEs and by synchronizing the support provision across educational levels and environments, with the help of the DCA framework. In a unified system, the holistic structure and shared philosophy of DCDEs (Storm et al., 2021), and support aiming at helping athletes balance their DC, can be key themes for developing a “red thread” in the system, from upper-secondary to university level. One such red thread could be that in all environments there is a dedicated DC support team with a DC coordinator and DC support providers, or the like, which between levels/environments can be different people but the student-athlete can recognize the roles and thus more easily navigate in the system/new environment. Another benefit of a unified system is that it can promote the inclusion of career advisors that work “longitudinally” with athletes throughout developmental phases and transitions, for example, from junior-to-senior, from upper-secondary-to-university, and from sport-to-work, creating a career-long support service (Ekengren, 2020) for athletes’ DCs in Sweden. A step towards a unified DC system could be to expand the Swedish DC guidelines (Swedish Sports Confederation, 2018a) to include the upper-secondary education level.

Conclusion and Personal Reflections

This PhD Project answers the call from the European Union (European Commission, 2012) by suggesting a framework for support provision throughout athletes’ DCs based on national and international research, and in turn supporting the continued development of the Swedish DC system. Derived from a synthesis of the holistic developmental and ecological approaches (Henriksen & Stambulova, 2017; Wylleman et al., 2013) together with findings from Studies I-IV and related research, the DCA framework (see Figure 9) is presented. The DCA framework is aimed at guiding professional DC practice towards helping student-athletes develop and maintain optimal DC balance to facilitate their striving for career excellence and by means support more sustainable DCs for student-athletes across Swedish sports universities. My hope is that this PhD Project and related work will stimulate discussions and developments across Sweden and inspire stakeholders beyond national borders, in line with the aim of making the DC a resource for athletes’ development in life.

In the same way as I started this thesis, I would like to end with some personal reflections. Evident in my author background, my personal recipe for pursuing athletic success did not work out as planned, and this experience has stimulated me to develop knowledge about these very things, to help others with their pursuits. Yet, to be honest, I never envisioned that doing research would be part of my path towards helping others. Although not intuitive at first, but doing research has many similarities with my previous working experiences as a chef. At fine dining restaurants, there are a few key ingredients involved to produce the tasty experience, namely, high quality products that are refined by dedicated, knowledgeable and creative people into high quality food through extensive investment of time. For me this resonates with doing research. You need high quality data, refined by experts in sophisticated yet innovative ways, and this takes a lot of time.
I see a similarity with the process of this PhD Project and how we, in the restaurants I worked in, changed the menu every six weeks or so, to keep up with the changing season and to stay up to date with the surrounding trends. Starting this PhD Project, the topic of athletes’ DCs was growing up and evolving and it has continued to do so since, with an increasing number of publications (Stambulova & Wylleman, 2019). Pursuing this PhD Project in parallel with the development of the topic represent a key challenge of the whole process. I have, together with my supervisors, re-visited the overall design and Project idea a few times along the way, to keep the Project up to date and relevant. Much like trying to re-invent a menu. I am pleased to say, that I think the menu is keeping up with the season. I envision that it will not take long until we find it worth-while to re-visit, challenge, and develop the menu further.

Innovation in cooking is usually manifested in experimenting with recipes and creating something that has not been seen, or tasted, before. Recipes in cooking, are in a way like scientific method. They provide the guidance in what to do to reach a goal. Although, in science, to create knowledge that has not been known, or written, before, is much more dependent on following the recipe. Although the recipe/method/procedure/analysis might be applied in a new area, topic, or combination, following it is still important to show scientific rigor. My predisposition as a chef is not to follow recipes down to its every step, which is a strength in terms of having a will to experiment and explore ideas, but this has also challenged me in adjusting to the ways of science. I recognize that at times I have wanted to do things “in my own way” as this is what has rewarded me in the past, whereas in research, doing it “like others do” has proven to be a strength. Going forward, I think it is important to still foster my personal resource of wanting to try new things with an acquired methodological competence, into a journey of curios scientific exploration. Such an exploration I envision will involve both research and practice as part of a community-based approach in which I will take part, not only in the theoretical development of the research field, but also inside, or close to, the applied practice. Not only inventing the recipe but cooking it as well.

Pursuing this PhD Project has been a dynamic journey of development and growth. Borrowing from the words of John and Taupin (1983) I am pleased to say that after all this time, I am standing better than I ever did, and feeling like a little kid. Wrapping up this PhD Project, I have only one more thing to say. I managed without coffee, but not without the support from the people on the next page.
Acknowledgement

All journeys are bounded by time and place, and if you are lucky as I have, your time and place will coincide with remarkable people that can influence your path and development. Below are people I would like to express my sincere appreciation to for their support throughout this PhD Project.

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References


Cosh, S., & Tully, P. J. (2014). “All I have to do is pass”: A discursive analysis of student-athletes’ talk about prioritising sport to the detriment of education to overcome stressors encountered in combining elite sport and tertiary education. Psychology of Sport and Exercise, 15, 180–189. https://doi.org/10.1016/j.psychsport.2013.10.015


D’Angelo, J. (2019). Ethics in science - Ethical misconduct in scientific research (2nd ed.). Taylor &


Skolverket. (2018). *Hemstället angående de gymnasiala idrottsutbildningarna; riksidrottsgymnasium och nationellt godkänd idrottsutbildning [Request regarding the sports gymnasium educations; national elite sports gymnasiums and nationally approved sports programmes]* (Dnr 2017:99). Department of Education.

Smith, B. (2018). Generalizability in qualitative research: Misunderstandings, opportunities, and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise, and Health, 10*, 137–149. https://doi.org/10.1080/2159676X.2017.1393221


Swedish law on research ethics


Swedish law on research ethics (Lag om etikprövning av forskning som avser människor) (SFS)


Appendices

Appendix A. Conference Abstracts (peer-reviewed) with relevance to PhD Project
Appendix B. Publications, Presentations and Awards during the PhD Education
Appendix C. Project Participation with relevance to PhD Project
Appendix A. Conference Abstracts (peer-reviewed) with relevance to PhD Project


Combining sport and education (or work) is termed as athletes ‘dual careers’ (DC) and it is an evolving area of research in Europe, guided by the European Union Guidelines on DCs of Athletes (2012). In this presentation, results from a Swedish national study will be presented. The aim of the study was to investigate university student-athletes’ DC competences (i.e., knowledge, skills, experience and attitudes) for a successful DC. The study is part of the European project ‘Gold in Education and Elite Sport’ (GEES) involving eight other European countries. Seventy-one Swedish university student-athletes (mean age = 25.2) representing various sports completed the DC Competence Survey. The survey measured student-athletes’ perceptions (i.e., importance and possession) of 38 DC competences (e.g., ability to prioritize, dedication to succeed, self-discipline, ability to cope with stress), and student-athletes’ experience of, coping with, and use of competences in seven challenging DC scenarios (e.g., missing important days in school, moving away from home, injury). The Latent profile analysis on student-athletes’ possession of competences indicated that the model with a 3-profile solution provided the best fit (entropy = 0.876; Parametric Bootstrapped likelihood ratio test = .01). Profile-1 (P1: n = 7) corresponded to student-athletes with an average level of competence; Profile-2 (P2: n = 42) to an average-to-good level of competence, and Profile-3 (P3: n = 22) to a good competence level. Profile-3 outscored the two other profiles in terms of mean coping with all seven DC scenarios (P1: M = 3.39; P2: M = 3.58; P3: M = 4.15), indicating that the more competences student-athletes possessed the better they coped. However, the pattern of coping between profiles was not consistent across all scenarios, suggesting that some competences were more important for some scenarios and less important for others. Further analysis aims to reveal scenario-specific competences to guide practitioners helping student-athletes in specific DC scenarios.


In Sweden dual ‘sport and education’ career (DC) programs on the high school level are established at 51 settings across the country. Within these programs student-athletes practice their sport in sport clubs and in educational settings, and have supportive conditions at school (e.g., flexible scheduling). This study, investigating Swedish high school student-athletes’ DC competences, is a national project and also a part of the European project ‘Gold in Education and Elite Sport’ (GEES) with eight other countries involved. In this presentation (approved by the ethical board of the GEES consortium) we briefly introduce the GEES project and then focus on Swedish research findings. The DC Competences Survey was used to explore student-athletes general as well as scenario-specific DC competences. The sample consisted of 909 high school student-athletes (mean age = 18.2; 43% females) from various sports. In examining general competences, the participants were introduced to 38 competences and asked to evaluate them in terms of possession and importance for a successful DC. The highest in possession was “ability to live independently”, and the top three in importance (also evaluated higher by females) included: “perseverance during challenging times and in the face of setbacks”, “understanding importance of rest and recuperation”, “ability to cope with stress in sport and study”. In examining scenario-specific competences the participants read six scenarios, each presenting a difficult DC situation (e.g., missing significant days of study, sacrifices in social life, living away from home, injury), and responded about coping experiences (including perceived effectiveness) and related competences. The competences significantly contributed to effectiveness of coping with DC scenarios. It was also possi-
to identify transferable competences used by student-athletes in four or more scenarios (e.g., “dedication to succeed in both sport and studies”). The findings have become useful in defining the content of DC support services in Sweden.


This presentation shares a case study of a dual career development environment (DCDE) at a Swedish university based on the holistic ecological approach (Henriksen & Stambulova, 2017). The goal of the study was to explore the DCDE’s structure, DC processes, and philosophy of the DC support team. Data were collected through 10 semi-structured interviews (with eight university and sports staff members and two collaborative partners) and two focus groups (with four student-athletes, and four coaches). Participants were asked about their perceptions of the environment, key relationships, philosophy, and support. Observation of real-life events (e.g., meetings, training sessions), informal talks with 13 student-athletes and 21 staff members and stakeholders during eight full days, and analysis of relevant documents (e.g. webpage) provided additional insights into the environment. Results highlighted that the structure of the environment was characterized by a strong regional sports culture and collaboration between stakeholders with geographical and relational proximity and strong DC coordination. The coach-athlete relationship was the key relationship for DC support. The central DC processes were university regulations providing the student-athletes with the right to study flexibly, integrated DC planning between the coach and the athlete, and access to expert support. The philosophy of the DC support team was characterized by treating the student-athletes as “whole persons” and responsible grown-ups, meaning that no support was provided if the student-athletes did not request it. Implications of the approach taken by this DCDE are outlined at the conclusion of this presentation.


Dual career (DC; combination of sport and studies) research is traditionally focused on student-athletes’ developmental demands and coping resources. To support athletes’ talent development in combination with education, sport federations and universities (and others) co-create high performance centers or DC hubs. Research into these environments is limited. Inspired by the holistic ecological approach, and particularly by the athletic talent development environment model (Henriksen, 2010), we created the dual career development environment (DCDE) working model and then used this model to explore a ‘sports and study’ environment at a Scandinavian university. The DCDE model is structured into three levels (micro, meso, and macro) and three domains (study, sport, and private) taking into account societal institutions, sport and education systems. Data were collected through semi-structured interviews with nine university elite sports-students about perceived support during their transition to, and first year within the environment, and with four stakeholders (e.g., coach, study director) to discover their perspective on the environment and the support they provided. Observations and documents collected from the environment web-page also supported the analysis. Key features of the investigated DCDE related mainly to the micro and meso levels and included: collaborative arrangements between sport and academic stakeholders aimed at facilitating the student-athletes’ DCs, high quality coaching and facilities, stakeholders’ shared focus on a ‘whole person’ including, for example, student-athletes’ physical and psychological well-being. It was also found that the daily life of the student-athletes was concentrated around the campus gym as a place to meet and discuss various sport, study and personal life issues with each other and with their physical coach (also a university teacher). Further study is planned to target the macro level of the environment to advance these findings.
Balancing studies, a personal life and sports, that is, having a dual career, is considered as a challenge associated with transitional demands in athletic and non-athletic (psychological, psychosocial, academic/vocational, financial) domains (Wylleman et al., 2013). The aim of this study was to investigate student-athletes’ university transition with a specific focus on how student-athletes balance different domains of their lives. Twenty-three Swedish university student-athletes (mean age= 21.52; 16 males and 7 females) representing six sports (e.g., equestrianism, ice hockey, soccer, table tennis) partook in the study. Participants completed the Dual Career Monitoring Survey (DCMS), weekly, over the first twelve weeks of their university education. The DCMS is developed by the authors and measures student-athletes’ perceptions of balance, time investments, demands, coping, satisfaction, resources and barriers in relation to sport, studies, private life, social life and financial situation. In exploring student-athletes’ perception of dual career balance throughout the twelve weeks, an intra-class correlation analysis revealed a between-person variance of 0.14 (14%). That is, with regards to balance in their dual careers 86% was due to within-person variance, suggesting that balance is idiosyncratic, and that further analysis should investigate within-person change. Encouraged by these findings we continued with a person-centered analysis using the Dynamic P-technique for modeling patterns of data (Nelson, Ayllward, & Rausch, 2011). The relationships between changes in balance (i.e., prioritizing sport, studies or other domains of life), demands, coping and satisfaction throughout the twelve weeks will be presented. Our findings contribute to the understanding of balance as a central tenet of athletes’ dual careers (Stambulova et al., 2015). From our findings we suggest practitioners to take into account the individual dynamics in dual career balance from a whole-person perspective.


The professional dual career (DC) practice is emerging at university level in Sweden. Key for this development has been the dissemination of research findings, sharing of good practices, and establishing the Swedish national guidelines for elite athletes DCs (Swedish Sports Confederation, 2018). Although the Swedish DC guidelines outlines key areas for support, there is a lack of applied frameworks that can guide the support provision. Through a series of conceptual discussions, we synthesized findings from DC research that has flourished in recent years (see Stambulova & Wylleman, 2019 for a review) and present the DC assistance (DCA) framework. We link key ideas and concepts from the holistic developmental (Wylleman, 2019) and the holistic ecological (Henriksen & Stambulova, 2017) approaches, emphasizing a support that integrates a whole person, whole career, and whole environment perspective. The DCA framework is structured as a pyramid embedded in the national DC context and the local dual career developmental environment (Linnér et al., 2020). Major components include (from bottom-to-top): (a) the aim of support provision being helping student-athlete to develop and maintain optimal DC balance in the DC pathway. That is, helping student-athletes reach their sport and study goals, live satisfying private lives, and maintain health and wellbeing (Stambulova et al., 2015), (b) the DC scenarios (i.e., difficult situations or periods; Wylleman et al., 2017) and transitions that challenge the perceived DC balance, (c) the coping resources including personal resources (i.e., DC competences; Linnér et al., 2019) which are complemented and/or compensated by DC support (i.e., social support and help from others), (d) coping strategies (i.e., actions to deal with the DC scenarios and transitions), and (e) the outcome expressed in student-athletes’ becoming “winners in the short- and long-run” (Lindahl et al., 2011; Stambulova et al., 2015) meaning being able to manage the demands of a DC lifestyle and reap the benefits of a DC (e.g., improved post-athletic career adaptation). Taken together, the suggested sequence of components guides DC support providers in helping
student-athletes to choose the most efficient coping strategies to meet their challenges and maintain their DC balance. The DC support providers also need to keep in mind that depending on the person, situation, and context, some coping resources (e.g., athletic identity, motivation, or flexibility) might turn into a barrier to deal with (Stambulova, 2009). The DCA framework will be presented supported by research findings to stimulate an evidence-based professional DC practice.


Research into athletes’ dual careers has been guided by two main approaches. The holistic developmental approach has increased our understanding of the demands student-athletes’ face and the competences needed to balance their DC. The holistic ecological approach has shifted the attention to the developmental context and how DC development environments (DCDE) support or hinder student-athletes' development. So far, DCDEs and their functioning have been described and deemed effective based on general outcome measures (e.g., sport and academic achievements, dropout rate), but without a clear link to the student-athletes’ actual demands and supportive needs. In this study we explored how a DCDE facilitated student-athletes' transition to, and first year adaptation at university level, by combining the holistic ecological and holistic developmental approaches and considering DC balance as a primary concern for DC support. A mixed-methods intrinsic case study was implemented to explore the complexity and uniqueness of a specific bounded case, that is, a Scandinavian university-based DCDE and student-athletes' development within it. Inspired by the holistic ecological approach and the DC environment success factors (DC-ESF) working model we explored the case using multiple sources of data. Semi-structured interviews were conducted to explore the transition experiences of nine student-athletes and the perspectives on the environment and support from four key support providers. This was complemented by documents analysis and a quantitative monitoring of the student-athletes' transition experiences (e.g., perceived DC balance, demands, and coping) throughout the educational year. Findings are presented in a joint display by merging the qualitative and quantitative data in an empirical version of the DCESF model. The student-athletes experienced a challenging transition with both athletic and non-athletic demands. The environment was well-coordinated with support providers centered around a mission of “a balanced and synchronized whole” and targeting empowerment of the whole person. There was convergence across sources of information with qualitative and quantitative data showing that the student-athletes improved in their sport and study, and in their ability to balance their DC while also developing their DC competences. By integrating the holistic ecological and the holistic developmental approaches we were able to situate the environment in the student-athletes’ development and explicitly show the fit between student-athletes’ needs (i.e., perceived demands) and support provided in the DCDE. Based on our finding we believe effective environments are those that work to optimize their structure and culture to meet student-athletes’ needs, help student-athletes develop their DC competencies and maintain their DC balance.
Appendix B. Publications, Presentations and Awards during the PhD Education

Policy Document

Peer-reviewed Articles

Book Chapter (Peer-reviewed)

Book Chapter

Presentations at National/International Conferences with Peer-reviewed Abstract


Stambulova, N., Schinke, R., Van Raalte, J., Ryba, T., Brewer, B., Petiptas, A., Blodgett, A., Aunola,


Presentations at National/International Conferences not Published as Abstract


Educations/Workshops for National DC Stakeholders

**Linnér, L.** (2019, November 25–26). Introduction to factors contributing to the success of dual career
Awards

Recipient of the Bengt Nybelius Scholarship by the European Athlete as Student (EAS) Network on 13th of September 2017.

Linnér, L. (2019, November 25–26). Dual career development environments. Workshop provided for dual career support providers across Swedish sports universities (RIUs/EVLs) during a two-day education about athletes’ dual careers hosted by the Swedish Sports Confederation, Stockholm, Sweden.

Linnér, L. (2019, November 25–26). Introduction to dual career development environments and the example of Umeå athletics. Presented to dual career support providers across Swedish sports universities (RIUs/EVLs) during a two-day education about athletes’ dual careers hosted by the Swedish Sports Confederation, Stockholm, Sweden.

Linnér, L., & Stambulova, N. (2019, September 17). The ecology of dual career – Essential features of successful dual career development environments. Workshop provided for dual career stakeholders across Swedish sports universities (RIUs/EVLs) during a project-leader meeting for RIU/EVL hosted by the Swedish Sports Confederation, Falun, Sweden.


Linnér, L., & Stambulova, N. (2017, October 3–4). What role does dual career support providers have within the Swedish sport and education system. Panel discussion with dual career support providers across Swedish sports universities (RIUs/EVLs) during a two-day education about athletes’ dual careers hosted by the Swedish Sports Confederation, Stockholm, Sweden.


Linnér, L., & Ekengren, J. (2016, April 19–21). How can we help RIG student-athletes to develop the dual career competences. Workshop provided for dual career stakeholders across Swedish national elite sports gymnasia (RIGs) during the RIG-Conference hosted by the Swedish Sports Confederation, Stockholm, Sweden.

References

How can we help RIG student-athletes to develop the dual career competences. Workshop provided for dual career stakeholders across Swedish national elite sports gymnasia (RIGs) during the RIG-Conference hosted by the Swedish Sports Confederation, Stockholm, Sweden.

Linnér, L. (2019, November 25–26). Dual career development environments. Workshop provided for dual career support providers across Swedish sports universities (RIUs/EVLs) during a two-day education about athletes’ dual careers hosted by the Swedish Sports Confederation, Stockholm, Sweden.

Linnér, L. (2019, November 25–26). Introduction to dual career development environments and the example of Umeå athletics. Presented to dual career support providers across Swedish sports universities (RIUs/EVLs) during a two-day education about athletes’ dual careers hosted by the Swedish Sports Confederation, Stockholm, Sweden.

Linnér, L., & Stambulova, N. (2019, September 17). The ecology of dual career – Essential features of successful dual career development environments. Workshop provided for dual career stakeholders across Swedish sports universities (RIUs/EVLs) during a project-leader meeting for RIU/EVL hosted by the Swedish Sports Confederation, Falun, Sweden.


Linnér, L., & Stambulova, N. (2017, October 3–4). What role does dual career support providers have within the Swedish sport and education system. Panel discussion with dual career support providers across Swedish sports universities (RIUs/EVLs) during a two-day education about athletes’ dual careers hosted by the Swedish Sports Confederation, Stockholm, Sweden.


Linnér, L., & Ekengren, J. (2016, April 19–21). How can we help RIG student-athletes to develop the dual career competences. Workshop provided for dual career stakeholders across Swedish national elite sports gymnasia (RIGs) during the RIG-Conference hosted by the Swedish Sports Confederation, Stockholm, Sweden.

Awards

Recipient of the Bengt Nybelius Scholarship by the European Athlete as Student (EAS) Network on 13th of September 2017.
Appendix C. Project Participation with relevance to PhD Project

European Research Projects

**Erasmus+ sports project (2015-2016): Gold in Education and Elite Sport (GEES)**

Aim: To (a) Identify dual career competences (i.e., knowledge, skills, experience and attitudes) required by student-athletes (12-25 years of age) to maximize their capability to successfully prepare, manage and finalize their dual career education and sport pathway, and (b) identify competences of dual career support providers to facilitate athletes’ dual career development.

Coordinator: Prof. Paul Wylleman, Vrije Universiteit Brussels, Belgium

Partners involved: The project gathered 40 experts from 17 research or sports organizations from nine European countries (e.g., Vrije Universiteit Brussels, Belgium; INSEP, France; The School of Sport of CONI (Comitato Olimpico Nazionale Italiano), Italy; NOC*NSF, Netherlands; Gdansk University of Physical Education & Sport, Poland; University of Ljubljana, Slovenia; Universitat Autònoma de Barcelona, Spain; University of Stirling, Loughborough University, and SportsScotland institute of sport, Great Britain, and Halmstad University and Swedish Sports Confederation, Sweden).

My role: Researcher. Involved in national quantitative and qualitative data collection, analysis, publications, and dissemination.

Related publication(s): See, for example, Wylleman et al. (2017) or Study I.

**International Olympic Committee (IOC) advanced research grant (2017-2018): The development and evaluation of training modules for dual career support providers: A European pilot**

Aim: Develop and evaluate education modules for dual career support providers (DCSPs) based on GEES-project findings.

Coordinator: Prof. Paul Wylleman, Vrije Universiteit Brussels, Belgium

Partners involved: Four research partners across Europe including Vrije Universiteit Brussel, Belgium; The Universitat Autònoma de Barcelona, Spain; Windesheim University, Netherlands, and Halmstad University, Sweden.

My role: Researcher. Involved in national data collection, analysis, and dissemination.

Related publication(s): See, for example, Defruyt (2019)


Aim: To (a) develop a comprehensive understanding of the dual career development environments (DCDEs) across Europe, and (b) provide guidelines for the development and optimization of DCDEs supporting talented and elite athletes’ in their pursuit of sporting and academic excellence.

Coordinator: Dr. Robert Morris, Liverpool John Moores University, Great Britain.
Partners involved: The project gathered researchers from seven European countries (Liverpool John Moores University, Great Britain; Vrije Universiteit Brussel, Belgium; Syddansk universitet, Denmark; University of Jyväskyla, Finland; University of Ljubljana, Slovenia; The Universitat Autònoma de Barcelona, Spain, and Halmstad University, Sweden) and sports organizations from four countries (Sport Vlaanderen, Belgium; Team Denmark, Denmark; Talented Athlete Scholarship Scheme (TASS), Great Britain, and Swedish Sports Confederation, Sweden).

My role: Researcher. Involved in the data collection, analysis, publications, and dissemination.

Related publication(s): See, for example, Henriksen et al. (2020) or Study III.

National Projects

**National research project (2011-2012): Becoming a “winner in the long-run” – National elite sports-gymnasium students experiences of dual careers during their first educational year**

Project aim: To explore national elite sports gymnasium (RIGs) students’ transition to, and adaptation at RIGs during their first educational year

Coordinator: Prof. Natalia Stambulova, Halmstad University

Partners involved: Halmstad University and the Swedish Sports Confederation

My role: Researcher. Involved in the data collection, analysis, publications, and dissemination.

Related publication(s): Stambulova et al. (2015) or Stambulova et al. (2013).

**National policy project (2016-2018): Swedish national guidelines for elite athletes’ dual careers at university level**

Project aim: Through researcher and practitioner collaboration develop the Swedish model for the combination of elite sports and higher education and the Swedish national guidelines for elite athletes’ dual careers.

Coordinator: Swedish Sports Confederation and Halmstad University.

Partners involved: Dual career practitioners from the Swedish national sports universities (RIUs) including Chalmers University of Technology, Gothenburg, Umeå University, Umeå, Royal Institute of Technology, Stockholm, University of Gothenburg, Gothenburg, Swedish School of Sport and Health Sciences, Stockholm, and researchers from Halmstad University, and officials of the Swedish Sports Confederation.

My role: Scientific member of the working group and coordinator of the work with the guidelines.


Guidelines in English:
https://www.rf.se/contentassets/12b2b3db9b88485e847b3c7771d21b3d/swedish-national-guidelines-dual-careers.pdf
National research project (2020-2022): Dual career experiences of RIU/EVL student-athletes: A longitudinal study

Project aim: To (1) monitor during three years the DC experiences of RIU/EVL student-athletes with foci on their: (a) perceived challenges, (b) coping resources and strategies, (c) health and wellbeing, and (d) satisfaction with performance, development, and support provided at RIU/EVL; and (2) examine (year-by-year) the relationships between student-athletes’ perceived challenges, coping resources and strategies, health and wellbeing, and satisfaction with support provided at RIU/EVL and their development and performance satisfaction.

Coordinator: Prof. Natalia Stambulova, Halmstad University

Partners involved: Halmstad University and the Swedish Sports Confederation and all RIUs/EVLs.

My role: Researcher. Involved in the data collection, analysis, publications, and dissemination.

Related publication(s): The findings are presented once a year in a RIU/EVL-barometer report. Contact Lukas Linnér (lukas.linner@hh.se) for more information.
Original Studies I-IV


Lukas Linnér

Lukas Linnér has a Master of Science in Sport Psychology. This is his doctoral thesis in the field of Health and Lifestyle specialized in Sport Psychology, completed at the School of Health and Welfare at Halmstad University.

The European Union has called upon member states to develop a support throughout athletes’ dual careers. Dual careers (i.e., the combination of sport and study) has been facilitated in Sweden at the upper secondary level since the 1970s. In 2015, Swedish sports universities were introduced. This thesis explores Swedish university student-athletes’ dual career experiences from the holistic developmental and ecological approaches. A synthesis of approaches and findings are made, and a dual career assistance framework is presented to guide a professional practice.

Dual Careers of Swedish University Student-Athletes: A Synthesis of Holistic Developmental and Ecological Approaches

Lukas Linnér