NORWEGIAN SCHOOL
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Helene Jørgensen

Life Skills Development in Young High-Level Athletes

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Summary

The purpose of the current study was to examine the development of life skills through sport participation among young high-level athletes who are part of a talent development program. Life skills are identified as an outcome of positive youth development (PYD; Holt, 2016), which is a commonly used framework in youth sport research with a focus on using sport to develop well-rounded individuals (Fraser-Thomas, Côté, & Deakin, 2005). Talent development in sport, on the other hand, tends to focus on the development of better athletes. However, researchers have suggested that PYD and talent development are not necessarily mutually exclusive aspects of high-level youth sports (Strachan, Fraser-Thomas, & Nelson-Ferguson, 2016). That is, talent development programs can achieve PYD outcomes if an inclusive approach is present, emphasizing the teaching of both athletic and life skills (Harwood & Johnston, 2016).

To date, PYD within talent development programs has not been extensively studied. The current study addresses this gap in the literature using a qualitative approach. Individual semi-structured interviews were conducted with nine young high-level athletes (5 female, 4 male, M_{age} = 19.2 years, *SD* = 1.2) from the Canadian junior biathlon national team. Interviews focused on what life skills were developed through sport participation, how they were learned, and how the athletes transferred these from sport to other life settings. The data was analyzed using Thorne's (2016) interpretive description (ID) methodology. The model of PYD through sport (Holt et al., 2017) was used as a conceptual framework to develop the interview guide and organize the results (explaining what life skills are developed). Three categories were identified, namely: life skills learning contexts, PYD climate, and implicit processes. The results revealed that life skills were learned in multiple contexts (i.e., school, work, home). In sport, social agents (i.e., parents, coaches, peers) create a PYD climate that can contribute to athletes' development of life skills. Athletes revealed implicitly learning life skills through cognitive processes of observational learning and reflections related to experiences, both within and outside sport. A key applied implication of the findings is that coaches and sport psychologists should consider initiatives aimed at allowing development of life skills through implicit transfer in young high-level athletes.

Preface

The positive experiences I had as a young biathlete sparked my passion to continue my involvement in youth sport, even after my own athletic career ended. My youth sport experience inspired me to become a coach and to pursue a career in sport psychology. After completing a bachelor's degree in Training, Coaching, and Sport Psychology at the Norwegian School of Sport Sciences (NSSS), I moved to a full-time head coach position at the Edmonton Nordic Ski Club and a unique opportunity to do my master's degree in Coaching and Psychology through NSSS, while being supervised by both Dr. Pierre-Nicolas Lemyre at NSSS and Dr. Nick Holt at the University of Alberta.

Having the opportunity to experience sport from various standpoints (as a former athlete, a coach, and a novice researcher), I learned the value of youth sport in developing people as well athletes. My time at the University of Alberta, working with the Child and Adolescent Sport and Activity (CASA) lab, under the guidance of Dr. Nick Holt, taught me a lot about research and myself. There, I was introduced to a concept that I experienced firsthand during my own development as an athlete, one that now inspires my coaching philosophy and motivates my research. The concept is called positive youth development (PYD) through sport.

The question whether sport participation succeeds beyond athletic skill development and performance, is the background of this study. I wanted to know if high-level sport fosters development of the whole person, and in what ways. What skills can young, high-level athletes develop that will benefit them both in sport and life, and how are these skills learned and transferred. Specifically, I looked at life skills development in young high-level athletes from the Canadian junior biathlon national team.

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CHAPTER 1
Introduction and Background

1.1. Description of the Topic

Questions arise regarding the outcomes of sport participation; whether it holds the potential to exceed beyond athletic skill development and performance, and possibly influence athletes' personal development and long term benefits (Harwood & Johnston, 2016). A commonly used framework to research youths' developmental outcomes through sport is positive youth development (PYD). PYD is a strength-based approach that views youth as having "resources to be developed" rather than "problems to be solved" (Damon, 2004, p. 15). The area of PYD research is broad in nature, and contains different constructs related to the psychosocial and personal development of youth (Holt, 2016).

The concept of PYD has been used to study youth development through sport (e.g., Holt, 2016), and is a way to accrue optimal developmental outcomes through participation in sport in its all forms – from recreation leagues to high-level youth sport (Holt, Deal, & Smyth, 2016; MacDonald & McIsaac, 2016). The potential benefits of organized youth sport include physical (e.g., healthy lifestyle; Neely & Holt, 2014), psychological (e.g., goal-setting, time management, discipline; Holt & Dunn, 2004; Stambulova, Alfermann, Statler, & Côté, 2009), and social development (e.g., peer relationships; Côté, Turnnidge, & Evans, 2014).

To date, PYD through sport is primarily researched in North America and the United Kingdom (Coakley, 2016). Unfortunately, PYD remains largely absent from the practitioners in youth sport, such as coach education programs and the Canadian sport system in general (Holt et al., 2016). The operationalization of how to successfully deliver PYD through sport is a fundamental issue researchers must address to bridge the gap between research and current practice (Holt et al., 2017). Importantly, researchers and practitioners need to be aware of what influences PYD in various sporting contexts, such as the characteristics of the athletes (age, competition level; Turnnidge, Côté, &

Hancock, 2014) and nature of the sport (team vs. individual sports; Ettekal, Lerner, Agans, Ferris, & Burkhard, 2016; Jones, Lavallee, & Tod, 2011).

Although sport scientists have not agreed on a singular formal definition of PYD, it has been operationalized as life skills (Carson & Gould, 2008), thriving (Ettekal et al., 2016) and developmental assets (MacDonald & McIsaac, 2016). The researchers above explain PYD through sport as multiple constructs, and describe how these developmental processes allow for outcomes that transcend sport, such as transferrable personal and social skills (i.e., life skills). Holt and colleagues (2016) proposed that PYD within sport research could be defined as:

> PYD through sport is intended to facilitate youth development via experiences and processes that enables participants in adult-supervised programs to gain transferable personal and social life skills, along with physical competencies. These skill and competency outcomes will enable participants in youth sport programs to thrive and contribute to their communities, both now and in the future (p. 231).

Positive developmental outcomes do not occur unless specific actions are sustained over time, in a context clearly structured to develop positive outcomes such as life skills (Coakley, 2016; Holt et al., 2017; Johnston, Harwood, & Minniti, 2013). Life skills are defined as the physical, behavioral, or cognitive skills required to deal with the demands and challenges of everyday life (Hodge & Danish, 1999). Essentially, the development of life skills can contribute to PYD by preparing young individuals for events in sport and other domains of life (MacDonald & McIsaac, 2016). In fact, to be considered a life skill they must be transferred to other domains (e.g., school, work, home; Gould & Carson, 2008). Life skills transfer in sport psychology research has been defined as:

> The ongoing process by which an individual further develops or learns and internalizes a personal asset in sport and then experiences personal change through the application of the asset in one or more life domains beyond the context where it was originally learned (Pierce, Gould, & Camiré, 2017, p.194).

The ability to transfer these skills may occur as an implicit (i.e., self-awareness) or explicit (i.e., instruction by adult protagonists) process (Holt et al., 2017; Pierce et al., 2017; Turnnidge et al., 2014).

A commonly held assumption is that participation in sport provides the individual with life skills that can benefit their outcomes in sport and life (Gould & Carson, 2008). However, this idea has been under debate, as some researchers believe PYD outcomes are not necessarily a result of participating in sport (e.g., Shield, Bredemeier, LaVoi, & Power, 2005). In particular, the assumption that participating in sport will automatically produce positive outcomes is neglecting the complex structure of sport that is needed in order to facilitate PYD outcomes (Coakley, 2016).

It requires more than just participation to achieve PYD outcomes through sport. In fact, appropriate interactions between individuals and the sporting context must be established (Gould & Carson, 2008; Holt & Neely, 2011; Holt et al., 2017). The majority of studies of transfer of life skills in youth sport have focused on specific aspects of life skills development (e.g., the role of the coach; Camiré, Trudel, & Forneris, 2012; Gould, Collins, Lauer, & Chung, 2007) rather than broader transfer of life skills to other domains of life (Gould & Carson, 2008).

To advance the current knowledge about life skills development we need to investigate the specific sport context in which life skills may be transferred from (Turnnidge et al., 2014). In particular, the use of life skills may vary across different individuals (i.e., gender, age, competition level) and nature of the sport context (i.e., team vs. individual sports). As such, these differences (within individuals and their sport context) may need to be tailored differently across sport programs (recreational vs. talent development) to achieve an effective structure and interventions that can facilitate life skills development (Jones et al., 2011). Furthermore, this line of research can evaluate to what extent specific sport systems contribute to the development of life skills (Agans, Ettekal, Erickson, & Lerner, 2016).

1.2. Clarification of Research Questions

The overall purpose of this study was to examine the development of life skills through sport participation among young high-level athletes who are part of a talent development program. More specifically, the following research questions were addressed:

1. What life skills are developed?
2. How are they learned?
3. How are they transferred from sport to life?

1.3. Operationalization of "Young High-Level Athletes"

Young high-level athletes are identified in this study as youth and junior athletes competing at a national and international junior level. The young high-level athletes in this study were sampled from the Canadian 2017 Youth and Junior World Championship team in biathlon. These athletes are between aged 17-21 years, are a part of a talent development program, and have competitive experiences from both national and international competitions. This sample differs from commonly investigated 'competitive' youth sport as the participants in these studies generally tend to be younger (i.e., age 13-18; Fraser-Thomas et al., 2008). This study examines some key characteristics of a high-level sport context that can further be used to inform the design of programs to promote PYD through high-level sport insuring the development of youth sport participants beyond sole athletic skill development.

1.4. Thesis format

Development of life skills is a complex process; this study aims to provide insight on how this process may occur with young high-level athletes. The next chapter will outline current understanding of how talent development programs can achieve PYD outcomes (i.e., life skills), the role of the environment, and those involved at the 'microsystem' level of sport. After having established the current state of knowledge and its limitations within the field, an overview of theoretical approaches to life skills development will be presented. This chapter will also illustrate how practitioners can promote life skills development though sport. Further, the choice of conceptual framework (model of PYD through sport; Holt et al., 2017) is explained and justified.

The method chapter will offer a detailed presentation of how the current study was conducted. The results will outline the athletes' experiences of their life skills development, specifically highlighting key findings of life skills learning contexts and implicit processes. The discussion of the findings sheds light on how the results of this study compare to previous investigations of life skills development through sport, alongside providing implications, limitations, and strengths of this study. The final chapter summarizes the study's main findings.

CHAPTER 2
Existing Knowledge and Research

To date, the PYD literature has primarily focused on recreational and competitive levels of youth sport (see Holt et al., 2017). Studies of PYD – or more specifically the acquisition of life skills through sport participation – have rarely focused on young high-level athletes involved in talent development programs. Talent development in sport refers to the performance pathway within national sport organizations that develop individuals' athletic potential in a specific achievement domain (Harwood & Johnston, 2016). The goal is to maximize athletic development and meet the standards associated with performance (Stambulova et al., 2009). Therefore, talent development tends to focus on the development of better athletes, whereas PYD through sports focuses on the development of individuals into better people (Harwood & Johnston, 2016).

2.1. PYD in Talent Development Programs

A possible explanation for this "one-sided development" focus (i.e., athletic development; Stambulova et al., 2009, p. 208) can be illustrated by physically focused talent development models such as the Long Term Athlete Development program (LTAD; Harwood & Johnston, 2016). LTAD is extensively applied and promoted in national sport programs in Canada (e.g., Biathlon Canada LTAD; Biathlon Canada, 2006). The main focus of the model is placed upon the physiological development (e.g., windows of optimal trainability; Balyi & Hamilton, 2003), rather than psychosocial development (e.g., perseverance; Harwood & Johnston, 2016).

It is interesting to note, however, that despite this current practice, psychosocial developmental benefits are frequently a part of the outcomes advertised in national sport programs (Camiré, Werthner, & Trudel, 2009). That is, the mission statements of organized youth sport programs propose developmental outcomes such as psychosocial assets and holistic development. For example, the LTAD program developed by Biathlon Canada highlights "holistic development," "the 24hr athlete," "the whole life process, not just athletic skills" (p. 32), and the "need to transfer both knowledge and experiences from one area to another" (p. 45). Given these considerations, Biathlon

Canada LTAD does in fact emphasize the importance of life skills development in athletes to ensure a balance between sport and other areas of life.

These recommendations in the Biathlon Canada LTAD are consistent with suggestions in the academic literature to support the transfer of knowledge and competences in high-level sport contexts to other domains of life. For example, Stambulova and colleagues (2009) highlighted the need for a holistic focus for athletes, and the need to develop "transferable competencies (e.g., goal setting, planning, time/stress/energy management) to use both inside and outside of sport" (p. 407). Furthermore, these competencies could help in coping with demands and transitions across life domains.

Henriksen, Stambulova, and Roessler (2010a; 2010b) argued for a contextual approach to talent development to ensure a holistic focus for athletes. This involves looking at the environment surrounding athletes to understand the multiple factors that may contribute to athletic success and positive transitions in higher-level contexts. When talent development programs take a contextual approach to develop athletes, the program typically considers both micro- and macro- levels of individuals, within and outside sport that is related to the cultural context and time frame. A contextual approach promotes a holistic view of athletes' development by considering other contexts of athletes lives (e.g., school, home, friends), that can help stimulate their development of psychosocial competencies such as social skills, responsibility, and drive. Arguably, a contextual approach to talent development will help to achieve what many mission statements in organized sports already suggest (i.e., holistic development). Adopting values associated with PYD is one way sport systems can "challenge the youth sport experience to incorporate the holistic development… [that lasts] regardless of whether the athletes attain a professional status" (Johnston et al., 2013, p. 407). Focusing on the athlete's experience of life skills transfer is essential as most studies investigating PYD outcomes in high-level sport contexts have mainly focused on the influences within the microsystem of sport, such as the role of the coach (e.g., Strachan et al., 2011).

2.2. Coaching for PYD Outcomes in High-Level Sports

Coaching in high-level sports has been described as concentrating on athletic development with a focus to win (Cushion, 2007). Despite its emphasis on performance

gains, it has been suggested that high-level sports as well as all other sport contexts present clear opportunities for positive developmental outcomes in young athletes (Côté & Gilbert, 2009). Indeed, Strachan, Côté, and Deakin (2011) found that high-level youth sport coaches identified three key elements of PYD as being consistent with their approach: (1) appropriate training environment, (2) provision of opportunities for development of social, physical, and personal skills, and (3) supportive interactions. Although the high-level coaches believed that PYD could be promoted in this context, they also admitted that high-level sport may limit involvement in other contexts (e.g., family, friends, school) which can be a hindrance to achieving PYD outcomes. As such, Strachan and colleagues highlighted the importance of the environment and coaches to understand their role and responsibility to promote positive interactions within the sport context to ensure development of talented athletes, alongside positive growth of youth.

A recent study by Santos and colleagues (2017) interviewed 10 Portuguese football coaches of athletes (ages 16-39) about their role, coaching philosophies, and strategies to foster personal development within a high-level sport context (i.e., football teams competing in the first and second Portuguese division). Personal development differs from the term 'positive youth development' as it is not restricted to youth, but is a strength-based approach valuing individual attributes (e.g., to gain interpersonal competencies). The coaches believed that personal development is an essential component of high-level sport participation and linked to performance. Interestingly, the coaches believed that personal development could only be promoted if the coaches made the athletes explicitly aware of intended outcomes. Santos and colleagues (2017) suggested that high-level coaches should integrate both coaching practices and philosophies to provide opportunities for personal development within the sport context (e.g., develop positive social norms, provide opportunities to belong; Côté, Strachan, & Fraser-Thomas, 2008), but highlighted the need for future studies to investigate the perceptions of young high-level athletes to better understand how personal development is experienced to make the associated positive outcomes more tangible through sport.

In other words, recent studies support the notion that young people do need psychosocial assets to succeed inside and outside of sport. However, an important limitation of the studies listed above (i.e., Johnston et al., 2013; Santos et al., 2017;

Strachan et al., 2011) is the absence of the young high-level athletes' perceptions of the program delivery and how they may develop life skills in talent development programs. Previous research has highlighted the need for positive psychosocial skills in high-level athletes to achieve athletic success (e.g., Durand-Bush & Salmela, 2002; Gould, Dieffenbach, & Moffett, 2002; MacNamara, Button, & Collins, 2010a; 2010b) and support an emphasis on developmental outcomes such as psychosocial assets and a holistic development. However, the strategies necessary to achieve these developmental outcomes within talent development programs of younger, yet talented, individuals are not well understood (Harwood & Johnston, 2016; Johnston et al., 2013).

2.3. PYD in Young High-Level Athletes

Researchers have developed specific life skills program to promote psychosocial assets and personal development in young high-level athletes. Jones, Lavallee, and Tod (2011) created and evaluated the Enhancement of Leadership Intercommunication Teamwork and Excellence (ELITE) intervention as a method to increase the use of life skills in young high-level athletes (ages 18-20). Two female tennis players and three male field hockey players competing at a national and international level participated in the intervention that aimed to increase participants' self-awareness about their use of communication and organizational skills in sport and life. The ELITE intervention was scheduled over eight weeks, including a baseline period, two phases of life skills interventions, and a post intervention evaluation (i.e., semi-structured interviews).

Jones and colleagues predicted that reflection would make athletes more aware of their existing life skills, and result in an increase of the participants' use of the targeted behaviors (i.e., communication, organizational skills). The intervention, however, revealed minimal meaningful benefits. More specifically, the tennis players showed the greatest benefits in terms of the perceived use of the life skills, whereas the field hockey players only achieved trivial benefits. A possible explanation of these findings might be the nature of the sport that potentially influences their experience and development of life skills within the particular sporting context (i.e., team vs. individual sports). Given these findings, Jones and colleagues (2011) suggested establishing "the needs of each sample should be the first step of future intervention research" (p. 174). In other words, there is a need to tailor and structure the sport programs to target specific life skill needs

of the unique population. The authors could not, however, establish whether the participants transferred these skills to other domains of life, which is a key variable to be considered a life skill. As such, this study looked at potential life skills surrounding the high-level sporting experience rather than actual development of life skills per se.

In another intervention study, Hardcastle, Tye, Glassey, and Hagger (2015) examined a life skill program for young high-level athletes called Developing Champions (DC). The DC program focuses on key transferrable life skills to effectively manage the demands and expectations of the high-level lifestyle by applying adaptive behaviours in sport (e.g., training, competition) and life (e.g., school, home). The attitudes towards, experiences, and perceived effectiveness of the DC program were highlighted through focus groups and semi-structured interviews with young high-level athletes (ages 13-18) from six different sports and their sporting environment (coaches, parents, program facilitators, and sport administrators). The program was perceived as moderately successful valuing time management and planning skills as the key outcomes, while the "overload of information" (Hardcastle et al., p. 145) was experienced as a drawback of the program. A potential explanation of these outcomes could be lack of purposeful sampling of young high-level athletes from the same sport. Rather than focusing a range of transferable life skills, future interventions may want to avoid overlap, and target the life skills to the needs of the athletes and their sporting context.

In sum, these life skills interventions have produced limited to moderate effects. One reason may be the lack of information that currently exists about the life skills development *process* of young high-level athletes. Pierce, Gould, Cowburn, and Driska (2016) applied a grounded methodology approach to examine if and how psychological development occurs through an 'intensive' wrestling camp experience. Ten youth participants (age 14-17) and their sporting context were theoretically sampled. The camp had an explicit goal to develop skills for sport and life using intentional feedback from the coaches. The findings suggested that development of life skills was dependant on participants' openness, readiness, and reflections in relation to the sport experience, and perceived opportunities to transfer the skills over time (i.e., immediate or latent transfer). This study highlighted that the individual learners themselves are essential to psychological development. Further, high-level sport provided a unique context to

enhance both life skills and sport performance through implicit (e.g., self-reflection during and following the camp) and explicit (e.g., coach feedback) processes. Pierce and colleagues (2016) suggested future studies should investigate where, under what conditions, and within whom implicit and explicit approaches might work. Considering how this camp took an explicit approach (life skill program focus) to teach life skills, it would be interesting to see how a high-level sport context, *without* a specific instructional life skills program in place, might contribute to life skills development.

To summarize current knowledge of PYD in high-level sport, Rigoni, Belem, and Vieria (2017) conducted a systematic review on the impact of high-level sport in young athletes (ages 9-22). Their systematic review included 13 studies with the purpose to identify how coaches, sport/team, and athletes, positively and negatively, relates to PYD outcomes. Despite focus on performance, PYD outcomes could be promoted in high-level sport through coaches providing positive behaviours, role modeling, and support in a sport context that promoted positive experiences through a collective and motivational team atmosphere. The young athletes achieved PYD outcomes through the impact of the sport experience on personal variables (e.g., initiative, enjoyment), and/or the impact of personal variables on the sport experience (e.g., competence, autonomy, relatedness), which resulted in mostly personal, but also social life skills. On the other hand, factors that were negatively associated with PYD were related to negative experiences with coaches and/or peers, and ego-oriented athletes.

This review highlights the need for a better understanding of PYD in young high-level athletes for several reasons. First, Rigoni and colleagues explained it was hard to generalize the results as most studies lacked information regarding the level of the athletes and their sport purpose. Second, PYD was used as a theoretical basis in only one of the 13 studies, and was not specifically defined in this review. Inconsistent or vague definitions of PYD are often a concern in quantitative studies of PYD, as the findings vary based on the definition of PYD (and measures) being used (MacDonald & McIsaac, 2016). This is specifically important for this systematic review considering 11 (of the 13) studies incorporated were quantitative studies. Lastly, this review established an understanding of the impact of high-level sport on PYD *outcomes*. Future research must establish the *process* (implicit or explicit) by which PYD is introduced within the

various sport contexts (MacDonald & McIsaac, 2016). Thus, it appears that more purposeful samples (i.e., criterion-based sampling of young high-level athletes) could help inform our knowledge of PYD in high-level sport. In addition, a more specific measure of PYD outcomes (e.g., life skills), may contribute to a better understanding of the actual outcomes, and the processes in which development occurs (Holt et al., 2017).

By understanding how young high-level athletes learn life skills in a single sport context, and examining the contextual factors that may contribute to the process of life skills acquisition and life skills transfer, this study aims to make a contribution to the literature by providing a stronger foundation of knowledge for future interventions to life skills development in high-level sports. Such knowledge may also help to improve the structure of talent development programs and offer strategies to coaches, parents, and facilitators within the unique context of high-level sports.

2.4. Summary of Research Gaps

Talent development programs can achieve positive developmental outcomes if the context is aligned within an inclusive approach and a focus on transferrable competencies (e.g., life skills; Harwood & Johnston, 2016; Strachan et al., 2016). The transfer of skills "can work as a resource in coping with transitions both in and outside sport" (Stambulova et al., 2009, p. 208). Although there are contextual differences and the overall aims and objectives differ, the elements of supportive environmental features and appropriate structure are considered in both programs to enhance PYD outcomes (Harwood & Johnston, 2016; Wylleman, Alfermann, & Lavallee, 2004).

To date, PYD and talent development have not been extensively studied together in high-level athletes. To understand the development of life skills among young high-level athletes it is necessary to identify what life skills are beneficial in the life of the athletes and their sport (i.e., what life skills are perceived useful in the pursuit of high-level sport success, and vice versa), how life skills are learned and transferred (i.e., implicit and/or explicit) across the multiple contexts young high-level athletes belong to (e.g., training, competitions, everyday life, and career transitions; Harwood & Johnston, 2016). The current study will attempt to address this gap in the literature.

CHAPTER 3

Theory

3.1. Choice of Theory

To help researchers and practitioners identify how to achieve positive developmental outcomes through sport several PYD models have made a valuable contribution to the sport psychology literature (e.g., Côté et al., 2014; Gould & Carson, 2008; Holt et al., 2017; Petitpas, Cornelius, Van Raalte, & Jones, 2005). To further improve knowledge about PYD in sports, scholars advise the use of specific theoretical approaches to guide future studies in order to contribute to a better understanding of the complexities of PYD, such as life skills development through sport (Gould & Carson, 2008; Hodge, Danish, & Martin, 2012; Holt et al., 2017).

The current study was guided by Holt and colleagues' (2017) model of PYD through sport in a quest to better understand how athletes develop and transfer life skills. Other theoretical models were explored (e.g., model of life skills transfer; Pierce et al., 2017), however, the model of PYD through sport was chosen as it clearly illustrates ways in which the PYD outcomes may occur through an implicit or explicit focus on PYD (Holt et al., 2017). While the model of PYD through sport was developed based on a systematic review of the (qualitative) sport-based PYD literature, it has not been applied and tested in research to date. This chapter will describe three sport-specific theoretical approaches to PYD and argue for the use of the model of PYD through sport as the best theoretical framework to help answer the research questions of this study. Later in this chapter, the various elements of the model of PYD through sport are described in details to explain the factors that promote the process of life skills.

3.2. Approaches to PYD Through Sport

Initially, two sport-specific frameworks of life skills were developed based on narrative reviews of the literature. These frameworks – the positive youth development framework (Petitpas et al., 2005) and the model of coaching life skills through sport (Could & Carson, 2008) – have guided sport programs and research over the past decade. The contextual features of youth sport are highlighted in both models to explain how program facilitators can structure sport to achieve PYD outcomes.

3.2.1. Positive Youth Development Framework

Petitipas and colleagues (2005) presented the positive youth development framework for planning youth sport programs that foster psychosocial development based on four critical areas: (1) context (i.e., athletes engage in desired activity in a psychologically safe environment), (2) external assets (i.e., caring adult mentors, positive group), (3) internal assets (i.e., acquire and internalize life skills), and (4) benefit from the findings of evaluation and research. These assets have guided a sport-based life skills intervention in golf called The First Tee (e.g., Weiss, Stuntz, Bhalla, Botter, & Price, 2013) and research examining high school athletes' and parents' perspectives of life skills development through sport (Camiré, Trudel, & Forneris, 2009a; 2009b). The model is however limited by lack of explanations to how learning occurs within the sport program, which has been addressed in more recent frameworks (see Holt et al., 2017).

3.2.2. Model of Coaching Life Skills Though Sport

Gould and Carson (2008) developed the model of coaching life skills though sport, which was targeted toward youth sport program facilitators. The model emphasizes five major components: (1) previous experiences (i.e., internal and external assets), (2) current sport experiences and the direct or indirect teaching of life skills, (3) predicting the possible explanations for the life skills development in the social environment and the utility of the life skills strategies, (4) positive and/or negative outcomes of sport, and (5) the transferability of the life skills. Previous research has found the model useful in evaluating life skills program for young high-level athletes (e.g., Hardcastle et al., 2015) and in examining coaches' perspectives and strategies to develop life skills in high school athletes (e.g., Camiré et al., 2012).

When the model was developed, little attention was devoted to explaining why life skills do, or do not, develop through sport participation, or how they may transfer to outside sport. Gould and Carson (2008) presented "possible explanations" (p. 67) of life skills development and transfer as a part of their model in an attempt to explain the influence of the social environment and the utility of life skills. These are somewhat speculative suggestions regarding life skills transfer and PYD outcomes, largely due to the lack of life skills and PYD research that was available at the time when the model

was introduced (Holt et al., 2017). Nevertheless, Gould and Carson's model of coaching life skills through sport has guided and engaged researchers to further examine the principles of indirect and direct life skills teaching (e.g., Pierce et al., 2017; Turnnidge et al., 2014). This line of research is parallel to what we now know as implicit or explicit transfer of life skills process in sport (Holt et al., 2017).

Early sport specific PYD models explain how programme facilitators and/or coaches can shape the sport environment to foster life skills development. What they did not address, however, is the role of the individual athlete and the process of transfer (implicit or explicit). Given the growing interest in understanding PYD outcomes, two recent theoretical approaches attempt to move beyond description of the context, to provide reasonable explanations to how life skills develop and transfer (e.g., Holt et al., 2017; Pierce et al., 2017).

3.2.3. Model of Life Skills Transfer

Pierce, Gould, and Camiré (2017) presented a definition and model of life skills transfer. While extending on the knowledge from the model of coaching life skills through sport (Gould & Carson, 2008), the model attempt to describe the transfer process in a sport psychology context based on research from sport and other learning-based disciplines (e.g., educational psychology, business training literature).

Rather than describing how life skills can be facilitated by the coach and/or program facilitators, this model focuses on the individual learner as the core of the process. The model considers how the individual is an active agent in learning and transfer of life skills. The transfer process is thought to be influenced by the individuals' personal assets (i.e., internal, external, and previous experiences), their perceptions, and experiences of the life skills. This happens through an "interactive development process" (p. 196) in which the individual is bi-directionally influenced by the learning context (e.g., sport) and transfer context (e.g., school).

The model describes how the individual will develop within the learning context of sport. Sport is depicted as a potential learning environment with inherent demands (e.g., social interactions, competition; Fraser-Thomas & Côté, 2009), programme design (e.g.,

framework for fostering psychosocial development through sport; Petitpas et al., 2005), and coach characteristics and strategies (e.g., coaching philosophy, behaviours; Gould & Carson, 2008). The combination of the elements within sport are suggested to influence the individuals' life skills development.

The transfer contexts depends on environmental conditions perceived by the individuals' interpretation and experiences that will help or hinder transfer of life skills. The model proposes that life skills development and transfer occur as a result of the interactions between the individual and the sport learning context, and influenced by the larger socio-cultural environment (Bronfenbrenner, 1995). Transfer is viewed as an ongoing process depending on the interactions in the environment. Based upon these experiences, the individual can construct positive or negative life skill outcomes.

The model of life skills transfer offers predictions and explanations to understand what is currently known about the interactive process of life skills transfer within the sport context. The model is not designed to be tested in its entirety, but is described as useful to "organize and integrate the literature in order for the process of the life skills development and transfer to be broadly understood and studied" (p. 205). While the model has some variables that have received little to no support within the broader theoretical sport psychology literature, Pierce and colleagues (2017) explained how the model can help to generate future research questions, organize what is known about transfer, and inform important areas where additional research is needed. In particular, Pierce et al. (2017) suggested more "athlete-centered studies to explain the mechanisms when athletes attempt to transfer life skills they learned in sport" (p.205).

3.2.4. Theoretical Rationale

To summarize, PYD frameworks highlight the need to consider the unique contextual features and appropriately structured and supportive environments when examining the potential for PYD through sport while taking the individual learner into consideration (Holt & Neely, 2011; Holt et al., 2017). A general critique of the earlier PYD models developed for sport (i.e., Gould & Carson, 2008; Petitpas et al., 2005) is that they are based on a fairly narrow base of knowledge that was available at the time and did not clearly depict the processes through which PYD outcomes may be attained (Holt et al.,

2017). Furthermore, these models primarily focus on program characteristics and do not adequately account for participants' experiences within programs. In contrast, the model of life skills transfer (Pierce et al., 2017) and the model of PYD through sport (Holt et al., 2017) both identify the individual learner and the environment as key factors necessary to understand the athletes' life skills transfer process.

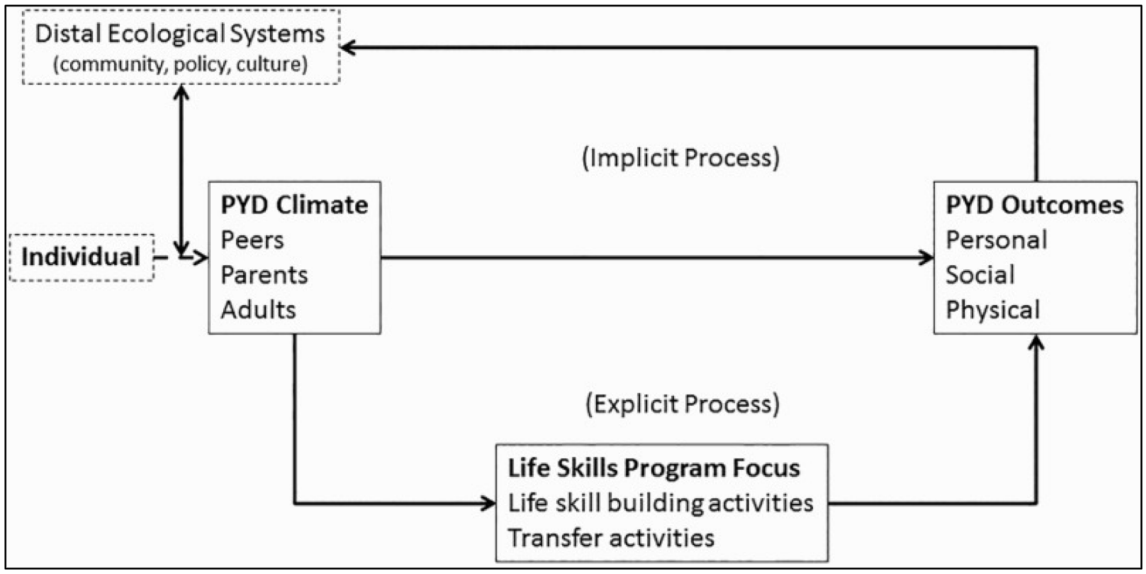
A strength of the model of PYD through sport is that it is conceptualized within the broader theoretical sport psychology literature. Holt et al. (2017) conducted a meta-synthesis of 63 qualitative studies of PYD in sport to evaluate, synthesize, and establish a knowledge base of extant qualitative studies on PYD to provide a parsimonious explanation of life skill processes and outcomes (Holt et al., 2017). The model of PYD through sport was chosen as a conceptual framework because it depicts both contextual and interpersonal factors influencing PYD outcomes through implicit or explicit processes. Additionally, this model offers a sound framework to operationalize the delivery of PYD within a talent development sport setting.

3.3. Model of PYD Through Sport

Holt and colleagues (2017) presented the model of PYD through sport (Figure 1) to bridge the current research-to-practice gap on ways in which sport programs can support PYD. The model is framed within the wider context of youth sport programs (i.e., distal ecological systems) and proposes a practical focus of learning life skills in supportive contexts (i.e., PYD climate) that may offer a life skills program focus (i.e., life skill building activities and transfer activities). The model of PYD though sport suggests that people can learn life skills in two different processes, known as implicit and explicit life skill transfer. In turn, these supportive environmental features of the sporting environment predict PYD outcomes in the personal, social, and physical domain.

Figure 1

Model of PYD through sport[1] (Holt et al., 2017)



3.3.1. Distal Ecological Systems

The model of PYD through sport is framed within the context of distal ecological systems. In essence, sport programs are microsystems (García Bengoechea, 2002) and until recently, most studies have tended to focus on the narrow context of sport programs (e.g., coach, parents, peers; Côté, 1999; Wolfenden & Holt, 2005). The impact of social-ecological systems and the potential influences of the macrosystem (e.g., culture of the sport, national sport systems, policy; Stambulova et al., 2009) in relation to the outcomes associated with sport is consistently highlighted in the literature. The model of PYD through sport is unique in including both microsystem and macrosystem influences. Deliberating on both levels can help sport programs to apply a holistic approach (Henriksen et al., 2010a; 2010b) and identify how PYD outcomes can be facilitated through the process of life skills transfer (Holt & Jones, 2008). For instance, in using the Holt et al. (2017) model it is necessary to consider the broader characteristics of a talent development program (such as the Biathlon Canada LTAD) that may shape athletes' experiences within that program.

[1] From A grounded theory of positive youth development through sport based on results from a qualitative meta-study, by N. L. Holt et al., 2017, *International Review of Sport and Exercise Psychology, 10,* p. 36. Copyright 2017 N. L. Holt. Reprinted with permission.

3.3.2. Individual

The model highlights the importance to consider the characteristics of the individual that are involved in a sport program. Both socio-demographic factors (e.g., gender, age) and personal variables (e.g., dispositions, traits) are factors that can influence how individuals acquire PYD outcomes through sport (Carson Sackett & Gano-Overway, 2017). Although the influence of the 'individual' on PYD outcomes were not necessarily addressed in the 63 qualitative studies, it was viewed as an important component to include in the model based on the synthesis of the broader literature (Holt et al., 2017). For example, individual characteristics such as age and cognitive maturity have been highlighted in previous studies as influential to life skills development (e.g., Camiré et al., 2012; Turnnidge et al., 2014). Also, Pierce et al. (2016) emphasized how individual's characteristics were necessary to further understand the process of transfer. Their study on wrestling athletes identified that PYD outcomes (i.e., life skills) resides in the learners' interpretation and experiences, both inside and outside of sport, "dependent on the psychological make-up of each individual athlete" (Pierce et al., 2016, p.348).

3.3.3. PYD Climate

Within the microsystem, parents, other adults (i.e., coaches), and peers create a PYD climate that can influence and enable youth to gain experiences that are associated with PYD outcomes. The PYD climate refers to the contextual features of the social environment (Holt et al., 2017).

Parents who engage in supportive behaviors contribute to the creation of a PYD climate. Parents are significant in providing social support and encouragement throughout athletes' career (Rees & Hardy, 2000; Wuerth, Lee, & Alfermann, 2004). In competitive sport, parents can positively influence athletes' sport experiences through encouragement and reinforcement (Camiré, Trudel, & Bernard, 2013; Holt, Tink, Mandigo, & Fox, 2008), which are shown to potentially prolong athletes' involvement in competitive sport (Fraser-Thomas et al., 2008). Parents can also play a valuable role in reinforcing what youth are being told in the sport program (Neely & Holt, 2014). Furthermore, autonomy-supportive parenting styles can contribute to children attaining PYD outcomes (Holt & Knight, 2014).

Coaches contribute to a PYD climate when they create positive relationship with athletes, built on care and respect (Gould et al., 2007). The relationship is important due to extensive amount of time that athletes and coaches spend together in the sport context (Camiré et al., 2013). In a strong relationship, athletes have explained their coaches as being good role models (Chinkov & Holt, 2015). Studies have highlighted that coaches' philosophy focused on personal development (Gould et al., 2007) and supportive behaviors (Holt et al., 2008) have had a positive effect on athletes' development of life skills.

Peers can contribute to a sense of belonging and valuable friendship (e.g., Fraser-Thomas & Côté, 2009; Strachan et al., 2016) that makes a valuable contribution to the PYD climate. A key feature of positive interactions with peers is their enduring nature, having friends, and feeling a part of a training group (Fraser-Thomas & Côté, 2009). Further, peers can give a sense of a supportive environment in sport (Fraser-Thomas et al., 2008). Athletes have explained that their relationship with peers can create an atmosphere for learning life skills through sport (Holt, Tamminen, Tink, & Black, 2009), based on support and opportunities to learn from each other (Chinkov & Holt, 2015).

3.3.4. Explicit Process: Life Skills Program Focus

The explicit approach postulates that the transfer of life skills is taught rather than caught (e.g., Hodge, 1989) via a life skills program focus (i.e., life skill building activities and transfer activities). For example, the adults assist the athletes in identifying the skills they attain through sport, and recognize the potential use in other domains of life (Gould & Carson, 2008). A life skills program focus is described as specific and intentional techniques or strategies designed to influence PYD outcomes, and in turn life skills. For example, this may be a specific life skills program delivered in a sporting context, such as The First Tee program (Weiss et al., 2013).

A life skills focus provides opportunities for life skill building activities and transfer activities within the context of sport. Life skill building activities include the use of specific pedagogical strategies to promote PYD, such as taking advantage of teachable moments (Trottier & Robitaille, 2014). Transfer activities refer to activities that

promote the transfer of skills learned in sport to other domains of life. For example, coaches may emphasize transfer by having discussions with the athletes to reinforce the importance of life skills (e.g., Gaudas & Giannoudis, 2010). To date, research about the use of explicit pedagogical strategies that intend to promote transfer are limited (see Holt et al., 2017).

3.3.5. Implicit Process

In contrast to the explicit (life skills program focus) process, the implicit approach postulates that life skills learning are facilitated if an appropriately structured PYD climate is in place within the sport program (Chinkov & Holt, 2015). It does not imply the transfer happens automatically merely by participating in sport, but rather highlights that it is possible to create developmentally appropriate environment in which athletes implicitly learn life skills (Holt et al., 2009; Turnridge et al., 2014). Moreover, recent literature illustrates how athletes can transfer implicitly from sport to other areas in life (e.g., Chinkov & Holt, 2015; Pierce et al., 2016).

While many studies of life skills transfer tend to focus on the explicit process (e.g., Carson Sackett & Gano-Overway, 2017; Trottier & Robitaille, 2014), the implicit process can have an essential role that may be important to the practical application of how athletes can develop life skills "in the absence of coach-driven deliberate strategies to teach life skills" (Pierce et al., 2017, p. 199). Instead of a specific life skills program focus, coaches can foster PYD outcomes through everyday interactions and coaching philosophies. However, it should be noted that explanations for the implicit process are tentative, based on a small number of studies (e.g., Chinkov & Holt, 2015; Pierce et al., 2016). Researchers have observed that more evidence for the implicit process is needed, and suggested that the implicit-explicit dichotomy may vary according to various context and age groups (Carson Sackett & Gano-Overway, 2017).

3.3.6. Personal, Social, and Physical Outcomes

Participation in sport programs that fosters PYD is associated with a range of outcomes in the personal, social, and the physical domain (Holt & Neely, 2011). The outcomes in personal and social domain are essentially life skills. Personal outcomes are related to personal growth and development of for example hard work ethics and problem-solving

skills (Hardcastle et al., 2015; Jones et al., 2011). Through sport, youth are exposed to situations that may provide them with social outcomes, such as opportunities to develop friendship and social skills (e.g., teamwork, communication; Camiré et al., 2009a, Jones & Lavallee, 2009a). Lastly, sport can teach physical skills, including improvement in motor skills and a healthy lifestyle (Côté & Hancock, 2014; Neely & Holt, 2014). By gaining PYD outcomes, youth are proposed to be able to thrive in adulthood and contribute back to their sport and communities (Holt & Neely, 2011).

3.3.7. Summary of Model of PYD Through Sport

The model of PYD through sport provides clarity that extends the literature regarding the transfer process of life skills. The meta-synthesis provide evidence to the ways in which the sport context can contribute to PYD outcomes. How these outcomes may be accrued are presented through a series of predictions (Holt et al., 2017). It illustrates that PYD outcomes can be obtained also without an explicit approach to PYD. That is, if a PYD climate is present. The model of PYD through sport offers a tool for administrators to frame valuable and supportive environments where PYD outcomes such as life skills are achievable (and transferrable) for the athletes involved.

CHAPTER 4
Method

4.1. Research Design

This chapter will outline and justify the research design and the methodological approaches (i.e., methodology and associated techniques) to provide an understanding of the procedures of this study.

Given the exploratory and applied focus of this study on the development of life skills (i.e., examining what life skills young high-level young athletes develop, how they are learned, and how they transfer to life) a qualitative research approach was selected. Qualitative research is useful for making sense of the meaning people attach to their experiences that can help us to better understand an underlying phenomenon (Mayan, 2009). Furthermore, the only existing quantitative measure of life skills in sport (e.g., Life Skills Transfer Survey; Weiss, Bolter, & Kipp, 2014) was developed for use in a specific recreational level golf program (The First Tee; Weiss et al., 2013), and it does not assess *how* life skills and learned and transferred. In fact, existing quantitative measures are currently lacking in the extent to which they can be used to assess the PYD *process* (see MacDonald and McIsaac, 2016). Therefore, given the novelty of this research, a qualitative approach was an appropriate and necessary selection.

4.1.1. Methodology

Interpretive description (ID; Thorne, 2016) methodology was used. ID is a qualitative methodology that is useful to move beyond simply describing a phenomenon, to provide a deeper understanding of the underlying experiences designed to generate "applied practical insight" (Thorne, 2008, p. 82). In using ID, the goal was to identify commonalities among the athletes' subjective experiences of learning and transfer of life skills in order to create new, credible knowledge that may inform practice (Thorne, 2016).

4.1.2. Philosophical Framework

In qualitative research, the researcher is the "instrument." That is, the prior knowledge, skills, and experiences of the researcher influence the entire research process, from the

design of the study and collection of data, through to the analysis, interpretation, and reporting of the results (Thorne, 2016). The role of the researcher is further described in section 4.6.

Additionally, ID requires an explicit positioning of the researcher's philosophical perspective (Thorne, 2016). Stating the philosophical (epistemological and ontological) assumptions within a study is important because the researcher's perspective shapes how a study is conducted and how knowledge is generated (Culver, Gilbert, & Sparks, 2012). Consistent with the philosophical underpinnings of ID, this study was approached from an interpretivist paradigm. The interpretivist paradigm is interested in individuals' experiences, seeking to understand the social world at a subjective level. That includes how individuals create feelings, meanings, and interests related to the context (Sparks, 1992). Further, interpretivist ontology assumes there are multiple realities, and that each individual will construct their own experiences of a complex reality through interactions in the social context. According to Thorne, Kirkham, and O'Flynn-Magee (2004), there are commonalities among individuals' unique and subjective experiences and perceptions. ID was used, therefore, primarily to identify and examine the shared aspects of athletes' experiences of, and opinions about, development, learning, and transfer of life skills.

4.2. Participants

Consistent with ID methodology, participants were purposefully sampled (Thorne et al., 2004). Purposeful sampling involves selecting information-rich cases who can provide insights into the topic of interest (Patton, 2015). More specifically, criterion-based purposeful sampling was used. Criterion-based sampling is choosing participants based on 'key' criteria reflecting their characteristics and/or experiences relevant to the research topic (Ritchie, Lewis, Elam, Tennant, & Rahim, 2014). Hence, the researcher develops sampling criteria that facilitate the selection of participants who can provide the "most" and "best" information to provide insights into the phenomenon of interest (Mayan, 2009).

The primary sampling criterion was that participants must have been members of the 2017 Canadian World Youth & Junior Biathlon Championship team. This team

included 16 athletes, considered to be "top 4" Canadian female and male athletes from two age categories, youth (age 16-18) and junior (age 19-21). Athletes' selection to this team was based on their best performances in two out of three races in the North American Cup in 2017. Out of the 16 athletes from this team, nine athletes volunteered to participate in this study.

This team was selected for recruitment because the athletes competed at an international junior level. The decision to focus on these young high-level athletes was based upon the initial theoretical scaffolding of this study (Thorne, 2016). Specifically, a critical review of the existing life skills development literature revealed that the experiences of young high-level athletes have rarely been investigated. The athletes on the team selected for recruitment had presumably attained a relatively high level of expertise in their sport, but had yet to make the next step into the professional level (i.e., senior level; Harwood & Johnston, 2016). This is typically a challenging phase of the talent development process due to life transitions and perceived pressure to perform, both in sport (Stambulova et al., 2009; Wylleman et al., 2004) and in life (i.e., university, work; Henriksen et al., 2010a; 2010b; MacNamara & Collins, 2010). Hence, this may be a particularly important period and context to study development of life skills.

The sport of biathlon was selected because it is an individual sport. Previous literature has suggested that the nature of individual sports may provide a different climate than team sports, and in turn may offer different opportunities for life skills (e.g., communication; Jones, et al., 2011). Additionally, the Biathlon Canada mission statement specifically acknowledges life skills as a viable source for athletes to foster a balance between sport and life (Biathlon Canada, 2006).

4.2.1. Participant Recruitment

Data were collected from nine athletes (5 female, 4 male, M_{age} = 19.2 years, *SD* = 1.2). As per sampling criteria, all athletes were sampled from the Canadian 2017 World Youth & Junior Biathlon Championship team and currently competed only in the sport of biathlon. They had been involved in multiple sports during their childhood. Three athletes were enrolled in an education program (i.e., high school, university), three athletes had a part-time job, and three athletes did both (i.e., online university course

and part-time job). They also shared similar goals, wanting to pursue biathlon at a professional senior level and compete in the World Cup and/or the Olympics.

4.3. Data Collection

Data were collected via individual semi-structured interviews. Given that the researcher is the instrument of data collection, prior to data collection, the researcher made an effort to build her skills as an interviewer (Thorne, 2016). Training included the researcher taking a graduate course in qualitative research methods, and reading literature on effective qualitative interviewing (e.g., Rubin & Rubin, 2012). Furthermore, the researcher had previously conducted qualitative studies with athletes in an unrelated study, and she conducted two pilot interviews prior to beginning data collection for the current study. Such training is valuable because the information that is obtained during the interview is largely dependent upon the skills of the interviewer (Patton, 2015).

4.3.1. Interview Guide

The interview guide (see Appendix G) was developed based on previous qualitative research on life skills (e.g., Jones & Lavallee, 2009a; 2009b; Kendellen & Camiré, 2015; 2017), guided by the model of PYD through sport (Holt et al., 2017), and tailored to the participants of this study (young high-level athletes). The interview guide was designed to ensure details, depth, and richness to answer the research questions (Rubin & Rubin, 2012). The interview guide was informed by guidelines from Rubin and Rubin (2012), including main questions, follow-up questions, and probes. The main questions provided the overall structure of the interview and addressed and discussed each part of the research questions. The follow-up questions explored and contributed to further depth by seeking thoroughness relevant to the research questions. Lastly, probes helped to manage the conversation in asking for clarifications and examples.

The main questions from the interview guide was emailed to the athletes one week before the scheduled interview (see Appendix F). The athletes were asked to think about the life skills they use in sport and life to aid recall and reflections during the scheduled interview. The interview guide started with questions about the athletes' involvement in high-level sport, and the need for life skills in this setting. Then, the questions

progressed to more specific questions regarding what life skills they have learned and how they transfer. For example, athletes were asked to list what life skills they have developed, other areas they use the skills, and how they transfer the skills. Further, the athletes were asked about the social agents and training environment, and how this helps and/or hinders their development of life skills.

Two separate pilot interviews were conducted with two athletes (M_{age} = 17.5, *SD* =1.5) competing at a national level in Canada in biathlon and cross-country skiing. The pilot interviews provided an opportunity to assess the effectiveness of the interview guide and if any questions or sections required editing for clarity. Following the pilot interviews, the pilot participants were requested to provide feedback on how the questions were formulated and asked (Roulston & Choi, 2018). The pilot interviews also provided an opportunity to reflect upon the researcher's own performance during the interview. The areas of improvements were discussed with her supervisors and academic mentors.

A key revision made following the pilot interviews was to develop a stronger introduction and explanation of the project from the researcher's perspective. Thorne (2016) refers to this process as disclosing the researcher's disciplinary orientation. This process included editing and carefully strategizing the preamble to include a short introduction about the study, a story from the researcher's own experience (of developing life skills through sport), and how it is necessary and helpful to hear the participants' stories. Adding a short portrait of the researcher is one way to gain a role as an "insider", and build trust to encourage a more open interview (Rubin & Rubin, 2012). It is however important to note that the researcher shared a life skills experience that was based of something the study participants could not have experienced themselves (e.g., moving to Canada from Norway on a graduate exchange) in order to avoid unduly leading the participants. The preamble ended with the researcher emphasizing enthusiasm for the opportunity to learn from the athletes' experiences (Thorne, 2016).

4.3.2. Semi-Structured Interviews

Semi-structured interviews allow for rich and detailed information from those who have the knowledge and experiences of the research purpose of interest (Rubin & Rubin, 2012). All nine interviews were conducted in person, in a room free of distraction in the athletes' training environment at a time that was convenient for them. Prior to the interviews, the athletes were provided the study information letter (see Appendix C), informed consent form (see Appendix B), verbal explanation of the study and their rights as participants, and a short introduction of the researcher. The participants that agreed to participate in the study signed the informed consent during the arranged meeting before proceeding with the interview. Interviews lasted, on average, 73.7 minutes (*SD* = 7.9 minutes).

4.4. Data Analysis

Following data collection, the nine semi-structured interviews were audio-recorded and transcribed verbatim. Five interviews were transcribed by the researcher, and the remaining four were transcribed by a professional transcribing company. In total, the transcribed material produced 235 pages of single spaced data. After transcription, the data were checked with the original recording for accuracy. To ensure participant confidentiality, the names of the participants and any identifiable information were removed from the transcripts. All athletes were assigned a code (e.g., Athlete 1 was given the code A1). Then, the transcripts were sent to the study participants to review. The interviews were analyzed soon after they were transcribed, and data collection and analysis continued in an iterative process throughout the study (Thorne, 2008).

In ID, it is important to recognize how the study directions and methodological techniques are enacted to transform the data into findings (Thorne, 2016). ID methodology offers a range of options for design directions, including the freedom to borrow analytic techniques of other methodologies to assist the analysis process (Thorne, 2008). That is, as long as the techniques are well informed, enacted in a coherent and fully justifiable manner, and the analytical thinking is documented (Thorne, 2016). The goal of the analytical process was to organize the possibilities of patterns to make sense of the core ideas through identification of meaningful themes and relationships.

4.4.1. Description of Cognitive and Technical Strategies

In this study, both cognitive and technical strategies were applied concurrently to advance the analytical process. The sequential cognitive process described by Morse (1994) was used as overarching cognitive 'framework' to guide the researcher's interpretive mind through the analysis. The following steps are important to achieve rigorous work that help to shape the eventual finding (Thorne, 2016): (1) *comprehend* the data to learn about the experiences within the phenomenon; (2) *synthesize* the data to describe and verify the content, pattern, and variations; (3) *theorize* relationships to develop "best guesses" about the results to understand the phenomenon; (4) *recontextualize* data to place the results within the literature and explain how the findings support existing knowledge.

To achieve step one (*comprehend*) and two (*synthesize*) of the cognitive process (Morse, 1994), the general thematic analysis procedures described by Braun and Clarke (2006) were used, including six steps: (1) read and gain familiarity with the data; (2) generate initial codes; (3) group codes into themes; (4) review and compare the themes; (5) select final themes and identify key defining features; (6) write the research report around the themes.

The cognitive and technical approaches created an iterative process between data collection, analysis, and theory (Thorne, 2016). Although the stages of the cognitive processes and thematic analysis are presented as a step-by-step, linear procedure, the data collection and analysis was, rather, an iterative process (Fereday & Muir-Cochrane, 2006; Thorne, 2016). The strategies were helpful to navigate the analysis and mobilize the cognitive operations as the analysis progressed (Thorne, 2016). The next section will explain how the cognitive and technical analytical techniques were used concurrently to organize the interpreted data into codes, themes, categories, and relationships.

4.4.2. Data Analysis of This Study

In order to *comprehend* the data, the researcher engaged in the first two steps of thematic analysis (Braun & Clark, 2006). First, to gain familiarity with the data, each transcript was read multiple times while making reflexive notes. Then, the first round of

initial coding used an inductive-deductive analytical approach to understand how the data supported the first research question (what life skills are developed). This coding process did not deduce from a theory per se, but is somewhat deductive because a 'rule' was used to pay attention to details and nuances (i.e., research question; Kennedy & Thornberg, 2018). After the life skills were identified, the remaining data was coded using an inductive approach.

To *synthesize meanings* involved critical evaluation and connection of similar codes into themes, also known as the third step of thematic analysis. At this stage of the analysis, 'critical friends' (supervisors) helped to organize the material, combining the codes into themes. Potential diversities and consensus between the athletes' responses related to the research questions became visible at this point of the analysis (Fereday & Muir-Cochrane, 2006). For example, the study participants believed it was important to have contexts both within and outside sport (e.g., school, work) to develop life skills. To inform the next interpretive stage of the study, the researcher went back and forth between the previous steps to investigate the interaction of text, codes, and themes to ensure the initial analysis were fairly represented (Fereday & Muir-Cochrane, 2006).

The fourth step of thematic analysis was to review and compare the themes against each other and assign rules of inclusion. The constant comparison technique was used to identify common features and diversities in the coded segments (Corbin & Strauss, 2008). This "borrowed" technique allowed for discoveries of patterns within the phenomenon (Thorne, 2016). To better understand the thematic analysis, "individual profiles" (see Appendix A) of the athletes were created to provide a better overview of each life skill narrative to better comprehend their shared commonalities and variations.

The findings were regularly shared and discussed with critical friends (supervisors) to gain further insight and perspectives on ways the data could be combined together. The themes were organized into three main categories; life skills learning contexts (represented by sport context, other contexts, and family context), PYD climate (represented by parents, coaches, and peers), and implicit processes (represented by observational learning, reflections on experiences, and automatic). The fifth step of the thematic analysis was used to carefully examine the themes to identify key defining

features. The themes were important to capture the phenomenon and describe patterns of behavior and experiences of both atypical and typical stories from the participants development of life skills (Mayan, 2009).

Then, the relationships within the data was *theorized* to make sense of the findings (Thorne, 2016). Theorizing results included organizing the themes into a logical framework to illuminate relevant insight. This is a necessary process in an ID study to improve our understanding of the findings in light of existing knowledge and theory (Thorne, Kirkham, & MacDonald-Emes,1997). While theorizing relationship to existing knowledge is not necessary a formal step in thematic analysis, Braun and Clark (2006) explain the analytical steps are flexible. Thus, a deductive format using a pre-existing model was applied (Morgan & Hoffman, 2018).

The model of PYD through sport (Holt et al., 2017) was broadly used to organize the results into three categories according to the concepts that influence life skills development (e.g., life skills learning contexts, PYD climate, implicit processes). Although the model was used 'loosely' rather than 'tightly' to inform basic category structure, this part of analysis was rather deductive. The initial themes and categories were paraphrased to work with the model of PYD through sport. Importantly, paraphrasing the themes and categories was guided rather than restricted by the model. This step did not include adapting findings to ‘fit’ this framework, rather, the findings were interpreted “to understand how the context plays out the individual experience to the extent it can be known and acted upon” (Thorne, 2008, p. 224). For example, some of the identified themes in the current study were related to Holt et al. (2017) category of ‘implicit processes’ (e.g., observational learning, reflections on experiences) did not exist in the model of PYD through sport. Therefore, using categories in the model helped to organize the data, while the unique themes arising from the current analysis were retained to reflect the findings of this study.

Recontextualizing data into meaningful findings involved writing and presenting the results (Thorne et al., 2004). The findings illustrate examples from the data, and elaborate on both shared commonalities and variations to understand the structure and complexity of the phenomenon (Thorne, 2016). Also known as the sixth step of

thematic analysis involved repeated drafting and editing to ensure the most important findings were presented (Thorne et al., 2004).

The final step of analysis in an interpretive description is to make a conceptual claim. A conceptual claim captures the important elements within the phenomenon that can be appreciated and understood by the practitioners in the field. This 'claim' is important to make new findings accessible by presenting practice wisdom that are fundamental to understand the phenomenon beyond what was known before (Thorne, 2016). The conceptual claim of this study is presented in Chapter 6 (discussion).

4.5. Assessment of Rigor

Mayan (2009) explained that there are different options and criteria to evaluate the rigor of a study. In qualitative research, rigor is directly related to the trustworthiness and logic of the research results, grounded in both intellectual rigour of the researcher and application of rigorous methods (Merriam, & Tisdell, 2015). The researcher should be able to explain why the research tells a story through the use of methodology. This should be a decision based on logic and reasonable explanations.

Rigor does not belong to a certain stage, but infuses the entire qualitative research process (Patton, 2015). In ID, a visible and auditable research report is essential to conduct rigorous and trustworthy work (Thorne, 2016). Specifically, the study should make clear how the findings are grounded within the data (Merriam, & Tisdell, 2015, Thorne, 2016). This study considered applications of various strategies, both methodological and interpretive, to ensure credibility and rigor, including interview training, piloting of the interview guide, concurrent data collection and analysis, and critical reflections (Mayan, 2009). The techniques are made transparent through this chapter to inform the *procedures*, while helping to give a valid account of the *presentation* of the findings (Flick, 2011), presented in Chapter 5 (results).

Prior to data collection, the interview guide was peer validated, piloted, and as necessary, changes were made before the interviews with the study participants (Brinkmann & Kvale, 2014). As previously explained, the researcher in this study is considered an "instrument", and the quality of information obtained during the

interview is largely dependent on the researcher as an interviewer and interpreter (Patton, 2015). In this study, several steps were considered to prepare the researcher, including becoming knowledgeable of the interview theme, practicing a clear but gentle interviewer role, and verifying the researcher's interpretations during the interviews by reflecting on when to follow up and clarify meanings (Brinkmann & Kvale, 2014).

Consistent with ID methodology, the data were collected and analyzed concurrently. That is, a mutual interaction between data collection and analysis informed each other iteratively (Thorne, 2016; Thorne et al., 2004). In ID, this constant interaction ensures continual engagement with the phenomenon that helps to generate the findings (Thorne et al., 2004). It also provides opportunities to confirm, test, explore, expand, and move with the data as it was told (Mayan, 2009) and helps inform decisions about data saturation. That is, by collecting and analysing data concurrently, the researcher can make a decision about when the themes are adequately saturated and that further data collection is not necessary to achieve the aims of a study (Mayan, 2009).

A reflexive journal was used to keep track of thoughts, feelings, and unfolding challenges as the study progressed. This type of journaling helped to analyze and consider defensible analytical directions (Mayan, 2009; Thorne et al., 1997). After each interview, reflections about the conversations with the study participant were recorded. The participants' unique ideas and experiences were logged, in addition to thoughts about missing opportunities to probe that helped gain depth and details in the coming interviews (Rubin & Rubin, 2012). The journal was helpful in strengthening and improving the interviews, but also to ensure an ongoing awareness and critical thinking by tracking how the linkages of reasoning came into play (Thorne, 2016). As the study progressed, findings, relationship, and tentative speculations were also discussed, and peer briefed with supervisors and other students to ensure critical and theoretical thinking (Flick, 2011; Merriam & Tisdell, 2015).

Prior to analysis, the transcripts were returned to the participants (via email) and they were asked to confirm that they represented their subjective experiences (Flick, 2011). This protocol was not meant as a "credibility check" (see Thorne et al., 1997), rather

used to ensure the facts were accurate (Thorne, 2016). Four study participants responded to the e-mail with minor edits regarding wording of quotes.

4.6. The Researcher's Role

Alongside the strategies and methods described above, the researcher's integrity and ability to think and proceed in an ethical manner are essential to ensure rigor and trust (Merriam & Tisdell, 2015). The quality of the process and the final product depends upon the researcher's integrity and reflectivity (Merriam & Tisdell, 2015). The researcher's integrity is mostly intellectual, locating the researcher within the study (Thorne, 2016). The researcher's reflexivity involves attention to how and why the interpretations and decisions are made in every aspect of the study (Mayan, 2009). Positioning the researcher within the study must be explicitly recognized, surfaced, and reflected upon to give the readers a sense of how the participants subjective knowledge was co-constructed (Thorne, 2016).

In this research, the researcher was perceived as "insider" based on her current and previous experiences in biathlon. The researcher is a 25-year-old female master's student who have experienced life skills development through biathlon during her own athletic career, albeit at a younger age (age 9-18) and lower competition level (i.e., national level) than the participants in this study. During data collection, the researcher had a role in in the biathlon community in Canada as a head coach in one of the local clubs. She had never coached any of the athletes participating in this study.

While it is important to acknowledge potential positive and negative biases attached to the researcher's role (Rubin & Rubin, 2012), Thorne and colleagues (1997) says the attempt to eliminate all biases is naïve. Instead, the researcher should identify the preconceptions that are held, and make sure the analytical directions are defensible both before, during, and after the interviews (Thorne et al., 1997).

During the interviews, it was particularly important for the researcher to not unduly impose her opinions and beliefs, or give the athletes a feeling that she was looking for specific answers. Instead, the researcher emphasized her enthusiasm learning from "their" subjective knowledge, and let the athletes shape their own stories. The process

as an "insider" also required attention and reflection before and after the interviews. To manage integrity, background perceptions and ongoing reflective notes were recorded (i.e., reflexive journal) to help the researcher understand her role in data collection and in construction of the research (Thorne, 2008). In addition to monitoring her reflexivity, the data and analysis were discussed regularly with supervisors and other students acting as critical friends.

4.7. Ethical Considerations

Merriam and Tisdell (2015) explain ethical considerations as an ongoing process to secure the study participants, conduct trustworthy research, and ensure quality. Throughout this study, several ethical strategies were carefully considered before, during, and after data collection with respect to procedures and practices (Denzin & Lincoln, 2011; Merriam & Tisdell, 2015). Ethical procedures include necessary and universal guidelines that are prescribed by institutional review boards to ensure the dignity and rights of the participants (Flick, 2011; Merriam & Tisdell, 2015). Since this project is a collaboration between the Norwegian School of Sport Sciences and University of Alberta, ethical approval was obtained from both the Norwegian Centre for Research Data (NSD; Appendix E) and the institutional Research Ethics Board (REB; Appendix D) at University of Alberta prior to the start of this study.

Protection of the study participants was considered prior to data collection and helped to inform the initial contact and recruitment procedures (no harm, privacy, informed consent; Merriam & Tisdell, 2015). In order to recruit study participants, the Biathlon Canada national team coach was contacted via email and asked to forward the information email to the athletes. The athletes that were interested in participating were asked to contact the researcher directly via email, and further information was shared. The information letter was sent to outline the purpose of the study, study procedures, and benefits/risks associated with the study, in addition to the main questions from the interview guide.

Ethical sensitivity and values was considered during the interview situations. Also called "relational ethics" refers to the researcher's role and impact on the relationship to the study participant, built on respect and free of pressure (Merriam and Tisdell, 2015;

Rubin & Rubin, 2012). Written informed consent was signed prior to the interviews, and the study participants was reminded that they do not have to answer the questions if they did not want to, and that they could stop the interview at any point, without consequences. If the participants wanted to withdraw their data from the study, they were informed that they could contact the researcher up to four weeks following the completion of the interview.

The ethical considerations were also thoughtfully considered after the interviews in storing and disseminating the findings (Merriam & Tisdell, 2015). The written transcripts were locked in a drawer, and the audio-recorded interviews was stored in a password-protected database where it could only be accessed by the researcher and her supervisors. Since the participants of this study represented a specific team, it was important to secure the confidentiality of the participant to safeguard them from unwanted exposure (Denzin & Lincoln, 2011). Specifically, study participants' names were removed from the transcripts and replaced with a code (i.e., A1, A2, A3), and other identifying information (i.e., club, places, friends, coaches, contact information) were cleaned and replaced with more generic identifiers such as "coach" and "town" (Thorne, 2016).

In disseminating and representing the research findings, it was important to ensure an accurate representation of the participants' data by telling their stories about the phenomenon. The athletes' reflections are highlighted through their own quotes (Mayan, 2009) outlined in the next chapter of this thesis, the results.

CHAPTER 5

Results

Results are organized in two sections. In the first section, the life skills young high-level athletes reported developing through sport participation are presented (Table 1). In the second section, the ways in which the athletes appeared to learn and transfer life skills are presented. These results are organized around three main categories, each with associated themes. The first category, life skills learning contexts, refers to the different contexts in which athletes learned about life skills (sport context, other contexts, and family context). The second category, PYD climate, depicts the nature of relationships (with parents, coaches, and peers) that appeared to create an environment that facilitated the acquisition of life skills. The third category, implicit processes, refers to the psychological processes (i.e., observational learning and reflections on experiences) in which athletes engaged in order to learn and transfer life skills, as well as one theme that reflects some participants' opinion that life skills learning was automatic.

5.1. What Life Skills are Developed?

Table 1 summarizes the life skills participants reported that they developed through sport. The explanation column describes the inclusion criteria (i.e., description) of the theme. For the theme to be included in this table, a minimum of half of the athletes must have reported this life skill. A range of social and personal developmental benefits were reported.

Table 1

Summary of the life skills that are developed in young high-level athletes.

Theme (# of athlete respondents)	Explanation	Exemplar quote from athletes
Social		
Teamwork and social skills (8)	The ability to cooperate and communicate with other people.	A4: … you need to be aware of how other people function. I think just in general day-to-day how to deal with people and like live with them, talk to them, and communicate with them. I think everyone does that differently, but it is definitely useful to know how to deal with that, and you are sort of forced to deal with it on tour but then it's definitely a very transferrable skill I think.
Personal		
Dedication and hard work ethics (9)	The drive, positive attitude, and willingness to put down the work.	A3: Not stopping! If you have a work ethic you are going to continue to persevere and continue to go through it and get the job done instead of taking a break here, or taking a break there. You are just going to go and do it and be done.
Stress-management (7)	The ability to problem-solve, deal with stress, and adapt to situations.	A9: … the ability to adapt and to work with what you have, that has been probably the biggest life skill for me. To know that there's one way that things maybe do the best, but there's other ways to still get to that point. [You] might just have to work at it and problem-solve a bit to get there.
Focus (7)	The ability to aim your attention to work on a task or activity.	A8: I think teaching us to be in the moment. So, when I'm at school, I'm not thinking about biathlon. And when I'm at biathlon, I'm not thinking about school. So that really helps to juggle both of them because now when you're away from biathlon and on school, that's what you're focused on. Your biathlon part of your brain is resting, recovering. And when you're at biathlon, your school part of your brain is not really active.
Independence (5)	The ability to be responsible, independent, and manage life.	A8: … independence comes out in that way where it's like I don't need to be told what to do. I can look at a situation and say "OK this is what needs to be done, I'm just gonna do it."

Motivation (5)	The desire and/or wish to act and accomplish something.	A7: A biathlon example would be with my legs, I found it really hard at some points. I was like “why am I here?” I don’t like this, I could be doing so many other things with my time… But then I just thought about all the good things and all the things I wanted to get out of the season and the surgery I need to get it done if I wanna make it to my goals, which are motivating me. When it’s in hard times I think that’s where I need to find motivation the most.
Organizational skills (8)	The skills to be organized, plan, prioritize, and manage time.	A6: Just being able to manage all of the time that you have to put into biathlon, back into life. Because biathlon is my life but I have a life outside of that and I need to maintain that, and I need to have that organized. I think that one plus organization… It’s essential to be organized, to be able to balance the two… I think having that meticulous kind of organization is huge to be able to balance everything, ‘cause if I didn’t have that kind of organization, there’s no way that I’d be able to balance everything out. Especially with the amount of extra stuff that I do outside of biathlon.
Mentally strong (8)	The ability to push yourself and put in the effort, both physically and mentally.	A1: Really making sure that mentally being able to handle pain kind of thing, and also struggles… There is always something you have to work on in biathlon and your race. I mean, you could think you did 100% but it is never really 100%. There will always be a target that you missed or maybe you could work on a hill better… so I really think being able to give yourself constructive criticism and not getting down on yourself and say "no it's okay, that has passed and now you can take from it and learn," and also being able to use like "oh, I’m in so much pain right now I just want to quit," but take it and use it as fuel to like "no, keep going, you can do it."
Self-awareness (5)	The skill of knowing your limits, awareness of your abilities, and listening to your body.	A9: I know now how much I can take on. How much personally my body can handle and whether it’s training load or mental stress. I know I’m able to read my body a lot better.

5.2. Life Skills Learning Contexts

The life skills learning contexts includes the different settings in which the athletes appeared to learn about life skills. Three contexts were identified: sport context, other contexts, and family context. The sport theme captures the various sport contexts that participants believe have helped them learn about life skills. These sport contexts included training camps, living away from home, and the "general" features of being involved in high-level sport. The other contexts refer to work, studies, church, and other non-sport settings that helped the athletes develop as people, and helped them to develop and learn about life skills. Lastly, family context refers to the interactions in the family environment (with parents and siblings) as a context and opportunity to develop life skills.

5.2.1. Sport Context: "An extreme version of life"

The athletes believed being involved in sport was a beneficial context and opportunity to learn life skills. Within this theme, there were examples of the benefits of being involved in sport in general and, in particular, being involved in biathlon at a high level. In addition, participants talked about specific aspects of being involved in high-level sport (training camps, races/competitions, and living away from home) that helped them learn about life skills.

In terms of sport in general, A1 explained how sport was a big part of her life, resulting in opportunities to develop life skills. She said:

> Doing sport in general is a good way to learn different abilities, physically and mentally, that kind of stuff. Like with the time management, patience, managing people, I think that helps to move that over to your everyday life because in the end I think the sport, whatever sport you are doing, for me doing biathlon, it's a part of your everyday life. That's what you end up doing if that makes sense.

Several athletes specifically thought that being involved in biathlon at a *high level* was beneficial to learn life skills. As A8 said, being involved in biathlon exposed him to "situations that we never have a chance to go to in regular life." A4 explained that:

> Wanting to do the sport and wanting to be the best that I can be in biathlon sort of makes you do these things so it makes you push yourself… I mean, I want to be there and learn the skills so that sort of environment works to do that.

As these perspectives reflect, a key issue was being involved in biathlon at a high level. In this sense, biathlon was seen as "an extreme version of life" (A7). As A8 explained:

> Biathlon is really teaching us pretty much the majority of things we need in life because it is pretty much life in a different way, if you think about it… I guess it's almost like a mock form of life before we get to start our actual life.

Similarly, referring to being involved in high-level sport, A7 said:

> Just because of all the hours I put in I guess, and of all the time I put in. It's just something that comes with the sport and comes with the level that I'm at… it's easy to learn a lot of these skills in biathlon because it's so extreme… [it] help[s] in other areas of life for sure.

Within the context of biathlon, training camps seemed to be a particularly important setting for learning about life skills. A3 explained when he was younger, he attended training camps when organizers "brought in speakers and they talked about positive self-talk which was a big help." Training camps seemed to intensify the sport experience for the athletes, creating an 'extreme' sport environment. A2 said, "Those were really good; training camps. That's where you get to experience those extremes and actually learn how to, you know, take care of yourself."

Racing was also perceived as a context in which athletes could learn about life skills. A8 explained:

> I think that achieving good results in competition seems more stressful in a way because it's one chance… but then I think it really does teach us to perform well when we need to, and that also helps us in life as well… I think it teaches us to perform under pressure and that helps us with school and a lot of aspects of life.

A feature of being involved in biathlon at a high level was that several athletes (e.g., A2, A,3, A4, A5, A6, A9) had to move away from home at quite a young age. Moving away from home was a challenge, but it appeared to help athletes learn about developing life skills. A4 said, “I was 17, so that was definitely big because it was a pretty big change… moving away from home and having to manage my own life that was a huge learning curve initially.” Further, A3 explained:

> When I first moved out here I had no idea what I was doing… So, learning how to manage my time and knowing like, "OK, when I'm done training I go home and the first thing I'm going to do is have a recovery shake, then I’m going to have a shower, and then I’ll make lunch…” You have to know where to and how to manage your time. Time management is huge when it comes to something like this.

Hence, it seemed as though the combination of factors associated with biathlon (the time associated with being involved in high-level sport, training camps, races, moving away from home) contributed to learning about life skills. A5 captured this when she explained:

> Well, like it all fits together. I guess if you learn how to be a hard worker through biathlon let’s say, then you apply that to other aspects. Like if you have a job you want to do the best job that you can because if you are a biathlete and you are competing at a high level you are probably wanting to be the best, or one of the best. You are just competitive so that applies to everything.

5.2.2. Other Contexts: “You need to get out of the biathlon world”

Although biathlon was an important context for learning about life skills, the participants also recognised the value of other contexts, such as work, school, church, and other non-sport settings. A4 explained:

> Sometimes I find just like you need to get out of the biathlon world because having your brain there all the time focused on that’s really pretty detrimental to your likability in sport. You need to think about other things in life.

Athletes believed it was important to "have different things going on" (A1). A1 further explained:

> Biathlon might be your passion, you are dedicated and have that drive, but you might lose that spirit if you are just doing that, and you might burn out kind of thing. Being able to have something else on the side I think helps with it because you don't want to have just that as the only thing you are doing because you will eventually get tired of it.

A2 explained how he believed participation in sport only (or any other activity) could *restrict* the learning of life skills. For him, contexts away from sport were important. He explained:

> You learn about [life skills] when you have to combine sport with another activity. Sport, on its own, I don't think will teach that because you can't train for 12 hours a day. I don't know if you would get that experience if you were doing, if you were just working at some crazy job.

In particular, school were perceived as an arena that teach about life skills. A9 said, "I learned it [stress management] actually in school and then it kinda brought into biathlon." In this example, A9 suggests that life skills learned in school transferred to sport. The school context also helped athletes learn about "organizational skills" and "time management" from managing homework (A1), "the assignment deadlines" (A3, A5), and/or combining school with sport and other aspects of life (A4). A3 said, "Through school I definitely learned time management and stuff like that because I have always been doing a sport and we have always been camping or lived a pretty busy life." These examples suggest, for many of the athletes, the combination of being involved in high-level biathlon *and* other activities contributed to the development of life skills.

Athletes combined high-level sport with either school (A1, A8, A4), and/or work (A2, A6). A6 said:

> Just being able to manage all of the time that you have to put into biathlon, back into life, because biathlon is my life but I have a life outside of that and I need to maintain that, and I need to have that organized.

Similarly, A4 explained how the combination of being involved in biathlon and other activities contributed to the development of life skills. She said:

> Definitely taking a course at the same time as training [helps]. A lot of the time I'll get home from training and be really tired and not want to do my course and then it gets to the end of my course time and I still have lots to do so like learning that even though I'm tired I still need to, yeah have time for a nap, but I do also need to make a specific amount of time for that as well, my course.

Some athletes viewed their involvement in contexts outside of sport as a "different life." A8 said, "I guess living two separate lives in a way really helps you be good at both…" Further, A8 described: "It really helps you stay focused because you can switch off. And then when you come back, it's something new." Similarly, A1 believed having those experiences from other contexts were beneficial to "help with you further in life and becoming more and more adaptable to situations."

5.2.3. Family Context: "My parents didn't always do everything for me"

Within the family context, the athletes talked about how interactions with parents and siblings provided opportunities to learn about life skills. The family context did not refer to parental involvement in sport per se. Rather, it is about the general context of family life that appeared to help the athletes learn about life skills. Parents were typically highly involved in "every aspect" (A2) of the athletes' lives during childhood. However, parents also seemed to foster a sense of independence in their children. A8 said, "I think my parents didn't always do everything for me. They would try and teach me 'this is how you do it, now give it a try…' and so yeah, my parents helped me a lot."

Most of the athletes felt that their parents provided social support, reminders, and encouragement that helped them to learn life skills (e.g., A1, A3, A4, A5, A7, A8). A1 felt that she learnt life skills through her mom's encouragement. A1 said, "My mom I

know has thought me that [social skills] a lot. She is like ‘no, just ask the question, what harm can be done’ kind of thing. I think those are pretty important parts of it.”

In some family contexts, the athletes described how their parents created opportunities for learning in everyday family situations such as cooking, accounting, running errands, and work around the house. A3 said “doing little things is huge [to develop life skills].” Furthermore, parents providing a range of opportunities for their children was seen to be important. A1 said, “Opening us up to different experiences when we were younger has really helped.” Similarly, A8 described how his parents were not scared to take him to new places, encouraging him to try different things. A8 explained:

> They’re like, “you just don’t know. You have to experience it first and then you’ll be able to know how it is…” and my parents never sheltered me either… I think that helped a lot ’cause I’ve just had a good amount of experiences already.

The family context seemed to be most important when athletes were younger, and, in particular, the influence of parents seemed to decline as athletes aged (and became more intensively involved in biathlon). A7 said, “When I get older I guess I don’t spend as much time with my parents [I] spend more time with my friends and seeing how again older role models, how everyone interacts.”

In addition to parents, interactions with siblings also helped the athletes learn about life skills. The interactions with their siblings ranged from “chasing my older sisters around” (A9), to the general family life living with a sibling. A1 explained:

> I find having a sibling, older or younger, really helps with that because they are not going to be the same person as you even though you wish sometimes… I think it helps because I have got a lot better with my brother. Him and I don't always see eye to eye, and I think it’s really a good way to learn that people are different and need to have that patience because it’s not going to get you anywhere if you don't. It kind of causes more problems.

5.3. PYD Climate

The PYD climate is created by parents, coaches, and peers and describes how the different relationships *within the sport environment* created opportunities that could help the athletes to develop life skills. PYD climate is distinct from the life skills learning contexts because it focuses more specifically on relationships within the sport or biathlon (whereas the themes in the life skills learning contexts refers to the context of biathlon in more general terms, non-sport contexts, and family life away from the sport).

Within the PYD climate category, the parents theme considers how the parents talked about life skills in conversations (e.g., the use of life skills), and/or by providing social support such as encouragement through sport. The coaches theme refers to the interactions with their current and/or previous coach. The support from the coach may be provided in conversations and/or expressed through their coaching style. Then, the peers theme refers to both friends and teammates that were identified as important to develop life skills, both to learn alongside *with* them, and *from* them.

5.3.1. Parents: "I learned through the fact that my dad stressed about it"

The parents theme refers to parental involvement *in sport* that helped to create a beneficial environment in which the athletes could develop life skills. Parents contributed to a PYD climate in sport by providing social support. For example, A8 described how his parents kept encouraging him, especially when he faced challenging or new situations in sports. He explained:

> My dad wasn't scared to put me on skis because I was too young… It was just like, "I know you're scared, but it's gonna be OK," and so I guess they [parents] weren't willing to crack under pressure that I didn't wanna do something.

Some athletes described how their parents "stressed" about life skills in in relation to sport. A3 explained:

> My dad just talked a lot. After practice, he was asking how it went, asked why stuff happened, and after my races my dad would say, "good job, but what could

> you improve?" Like still staying focused on the same task… Dad always stressed focus, so I learned through the fact that my dad stressed about it, but then doing it and seeing it in the first place.

Parents stressed life skills in sport by for example providing reminders. A5 explained how her parents used to remind her to be organized with her sport equipment, saying "you'd better get this ready the night before." Similarly, A4 believed that her parents told her about life skills when she learnt various skills through sport. A4 said, "I feel like my parents have probably been like just generally talked about like, 'that was a useful skill you developed there doing this, you can use it in other ways.'" Further, A4 said that since she combined high-level sport with a university course, her parents would still remind her: "My parents have been sort of like; 'how are you managing your time? What do you need to do?'"

Some athletes explained how their relationship with parents changed over years. A3 described how his dad was more involved in sport when he was younger, with a more 'direct' approach to talk about life skills. A3 described as he got older, his conversations with his dad changed. A3 said, "The older I've gotten the less he has become sort of involved in that. Like now after a race he won't ask me what I can do better anymore because that is now on me." In later years, the parents seemed to support the athletes in different ways. A7 said, "It's nice to have people there who either they've done it all before or even who are older, like coaches and parents who can oversee and help you."

Most of the athletes believed parents relationship and support were essential to where they are today. A8 said, "My life had worked out differently if I hadn't been in sport and my parents hadn't been as good as they were. So, I think I'm pretty lucky in that." Similarly, A3 explained:

> I probably would have learnt about them [life skills] but it would have been way later on, and probably like from my dad's aspect, I probably wouldn't be where I am unless he was there and did what he did.

Although most athletes reported a positive relationship with their parents, some athletes did not report much about their parents' current involvement in sport (e.g., A2, A6, A9). This may be due to where they currently are in their career (i.e., high-level), and the time they spend in the sport context with coaches and peers. A9 said, "Training together every day, always seeing you develop pretty solid relationships with all of these people, your coaches, your peers. Yeah, I guess not so much parents."

5.3.2. Coaches: "A role model pushing us to be better people"

Most of the athletes described a strong relationship and close bond with their coach. The relationship was built on trust and support. For some of the athletes (e.g., A1, A8, A9), the bond was created over time with years of training with the same coach. A1 explained:

> I know for my experience I have been really lucky to have a really good coach… I have had [coach] since I was in grade 7, so since I was 12. After all these years you really get a good bond with them.

Similarly, A8 felt years of training with his coach positively influenced their relationship. He explained:

> Our coach he's been my coach forever but I really trust what he says, and I really believe in what he says, and we have a really good, strong relationship… I think being able to build relationships with people and have those strong relations really helps you work better together.

The strong relationship was described as a contributing factor in learning of life skills for many of the athletes. A9 explained:

> I'd known him for so long and we developed quite a close relationship. So that played a huge role in my development, and he was a contributing factor definitely to my life skills. He taught me many of them on his own.

Having a supportive coach seemed to create positive interactions in the sport environment where the athletes could develop life skills. A7 described how she felt support were important and based upon having a coach that has "confidence in you." A5 said her coach provided encouragement. She said, "He [coach] was always telling me to be more confident… They [coaches] kind of teach you all the time, like 'you can do this.' Like, you have to believe in yourself." The support was also appreciated when the coach was supportive of the activities that the athletes did outside of sport (e.g., school). A1 explained:

> They are both super, they are not the kind of coaches like "I want you to do biathlon and just biathlon," they want you to be successful in school as well. If you are like, "oh, I can't come because I have all this homework," they completely understand.

There was a general consensus among the athletes that coaches could help through reminders and hints (e.g., A1, A3, A5). A9 said, "I mean you have really influential coaches for sure that help you realize things, whether it's on purpose and they're just yelling the life skill at you or they're teaching you to do it." Similarly, A5 said, "The coaches organize what you do, they are the most experienced so they give you really good tips on certain things."

Interestingly, many of the athletes seemed to appreciate that their coach had a 'tough' or 'hard' coaching style. For example, A6 said that some of his skills were partly a result of "[coach] was a real 'hard ass', like you had to do what he asked, that was it, not his road or the highway, but sort of." Similarly, A8 described that his coach, "Really push me to always do my best because I just don't wanna let him down." Through hard work-outs, also other athletes described how their coach encouraged and touched upon personal life skills (e.g., hard work ethics; A3, A9). For example, A1 believed her coaches, "Both kind of helped teach me to be like 'give it your 100 percent!'" A9 explained:

> I would say my coaches, I guess I had a pretty good coach back in [city] who made me push hard, but I wanna say that skill was more developed when I

> started, when I worked here under [coach]. He was known to be pretty hard and give you really, really brutal workouts and so the life skill to be able to push hard and keep pushing even when you really wanna stop… that would be credited to [coach] and his ability… I would say that one was kinda coached into me for sure.

Although the coaches focused on to the athletic side of training, A8 said, "I think a lot of these skills I do owe to [coach] in a way because he's not just a biathlon coach for us. He's also a role model pushing us to be better people." Similarly, A7 described how her coach valued the person, not just the athlete. She said, "People were saying [coach] wanted to make good athletes, but he also wanted to make good people too."

There were, however, other views on the ways in which coaches influenced learning of life skills. A4 said it was hard to know the extent to which coaches help you learn, or, if athletes learn life skills on their own "because you always have a coach there and you are like, 'did I learn that, or, did I like get hints to learn that?'" Further, A4 said that their coach rarely talked 'directly' about life skills. She explained:

> Sometimes to an extent [talk about your life skills], but I wouldn't say they ever "this is a beneficial life skill…" but also coaches for sure are pretty beneficial just to know like where to start with the skills I think.

5.3.3. Peers: "To work and learn off of each other is a big one"

Having good peers and teammates were beneficial for the athletes to create an environment where they could learn and transfer life skills. A4 said, "It's really beneficial to have a team. Not just a team, but a pretty close team and have people and training partners." Several reasons were mentioned as to why and how peers influenced the sport environment. Particularly, "You train with them all the time" was highlighted (e.g., A1, A2, A4, A8). Over time, the athletes believed they could "develop pretty solid relationships" (A9). A9 said, "I think being out there with like-minded people every single day is a big point… when you're out there with the same people that are also doing the same thing it's easy to work on those [life] skills."

Similarly, A5 believed that over time, strong relationship with teammates could contribute to learning of life skills. A5 explained how peers could make you feel "more comfortable so you can relax, and maybe learn better once you are relaxed." Further, peers were perceived as a "huge part of the sport and experience" (A4), contributing to the enjoyment within the team and a "happier training environment" (A6). A1 explained:

> I think it helps to have that bond and continuity, team kind of aspect. It helps you enjoy it more as well. I think that is a big one because obviously if you are not enjoying it you don't want to continue. So, I think it also has helped with knowing this is what I want to do.

Some of the athletes did believe good peers were just as influential as their coaches (e.g., A2, A3). A9 explained:

> The athletes among ourselves I think are just as influential as the coaches are. We can kind of learn from each other. Everybody strives in different areas so the ability to work and learn off of each other is a big one that makes for a really good training environment.

Learning from peers were possible when you worked with them (A4), and having someone "at your level who are going through the same thing" (A7). Athletes believed being around peers at the same age and level were helpful because they presumably have the same skills that they want to improve (e.g., A1, A3, A7, A9). A4 said, "Mostly I would say athletes are a huge part but also like they are very important to be able to develop and work on your skills." Further, A1 said, "I think it really helps to have that bond. You are always with them. I mean, you learn with each other, race with each other, you have experiences with each other."

To share experiences with peers were perceived as an opportunity to learn from what they are good at. A4 explained:

> Everyone has a different skill that they are good at and everyone has more than

> one thing. But you know what other people are good at, and you can be like, "OK, I am not so good at that," and I need someone to improve this so I am going to look at them and try and learn from what they do or talk to them and see how they work things out.

Although peers of similar age were perceived as positive (e.g., A4, A,5, A9), there was also different ages within the training group, something that particularly the younger athletes appreciated. A7 said, "I think it's really cool when I got a bit older and I got to know some of the older athletes a little bit better." A3 described how he, the youngest male on the team, found it inspiring to interact with five years older senior athletes. A3 said, "They are racing in two categories above me and when you do a race and stuff with them and they all come over and say, 'hey, good job' and stuff like that. That's cool. It builds your confidence." Similarly, A6 described the senior athletes on the team, and said "The people that are on the team right now we're pretty all juniors except for three guys that are seniors and I look up to them like crazy."

Specifically, peers were viewed as helpful to give a "push" (e.g., A3, A4, A5, A9). A9 explained:

> They [peers] push me for sure. They make me strive to improve which is a big thing, but the teammates and stuff, I mean they're really, it's great to have support outside of pushing forward but like just to be like supported and have other people who are in the same scenario as you.

A3 believed that fellow athletes were probably the biggest thing you would find that would help to learn life skills. A3 explained:

> Because you can learn a lot from them by knowing what they are doing, and you also gain a lot because if they are better than you, you are chasing them, and if you are better than them they are chasing you so there is a lot going on there.

While all athletes mentioned their relationship to peers as useful in learning life skills, there was discrepancy about the importance of friendship. A5 said, "[It] is just nice that

teammates are like friends too." On the other hand, A2 believed, "The whole friendship thing doesn't really matter to improve as a biathlete." Some athletes believed having other friends outside sport were particularly important. A8 explained how only having friends that are involved in biathlon "would be a weakness to my development." He explained:

> I have my biathlon friends and then I have my friends that I've known from 6 years from school or live near to me so when I'm with them biathlon is not a thing. We don't talk about biathlon, we don't talk about sport really.

5.4. Implicit Processes

The implicit processes category refers to the psychological processes (i.e., observational learning, reflections on experiences) the athletes engaged in to learn and transfer life skills. Additionally, the last theme reflects some participants' opinion that life skills were developed automatically. The observational learning theme includes learning from others by observing them and/or having someone to look up to (role models). The reflections on experiences theme refers to learning life skills over time through reflections on various events. Specifically, learning is a result of reflecting on experiences such as making mistakes, trail and error, and/or opportunities to be independent. Lastly, the automatic theme reflects some participants' opinion that life skills learning was automatic and perceived as something that naturally happens as a result of being involved in sport.

5.4.1. Observational Learning: "An example for you to follow"

Many of the athletes described how they developed life skills through observing of others. Observational learning referred to watching how other people handle tasks or situations in both sport (A4, A9) and life (A3, A7). A4 explained:

> It is just sort of nice to be able to see how they deal with life and biathlon and you can sort of like, I watch how they train and watch how they, I mean that is one thing, but also like on tour and stuff I can see how they deal with their time outside of biathlon, their downtime which is huge.

The participants believed observational learning was helpful to learn life skills because, "When you're able to witness it firsthand it's easier obviously to, I think it's easier to work on as well" (A9). The athletes had various examples of how observational learning occurred. For example, the athletes described observational learning as "being able to witness certain things" (A6), or "watch people and see how they react" (A9). A5 described having someone to set "an example" of how to apply skills was helpful to her because "if it works better for you it is like 'okay that is something I will do now' because it's just an example they set I guess. An example for you to follow."

The athletes seemed to believe that many life skills could be learnt through observations. A5 said, "I think a lot of it [life skills] you can just observe… You can see what they are doing and then you can try to copy that or imitate it to a certain extent." A4 believed it was particularly helpful to see how different situations affect others. She said, "I think you see how it affects different people and yourself and you can be like 'OK,' obviously training all the time is not a great idea." Further, A5 described how observations of others was helpful. She said, "You just kind of just pick up on what other people are doing, how they act or how they react."

Many of the athletes explained how they would specifically observe role models (e.g., A3, A6, A7). Role models was perceived as "imperative" for some of the athletes. A6 explained:

> I think it's inevitable that everybody has role models… I think it's inevitable that there's always someone to look up to… What do they do, how do they live right and just kind of mimic that. I can adapt to it… and I follow that to the T.

Whom the athletes perceived as a role model varied from leaders in sport and other activities (e.g., cadets, church; A6, A8), parents (A1), to peers and/or other athletes (A3, A7). Specifically, older athletes were mentioned in observational learning examples (e.g., A3, A4, A6, A7). A6 said, "They [older athletes] are those role models that I look up to in everything in life." Particularly observing how they deal with both sport and life (e.g., school) is helpful. A7 said, "Having older role models like that and me being the younger one on the team, just seeing how they get ready for races… seeing how

they're getting ready on the day." Older athletes were also perceived as beneficial because they have gone through similar experiences. A4 explained:

> … and then just friends who like other people like some of the older athletes on the national team like I can learn from them too and how they have figured it out which is nice. It's really nice actually because they have already gone through the similar, like they know. They have an idea of how they balance things so I can sort of figure it out from them or take their advice.

To see how peers of similar age and level execute a task were also mentioned as useful (e.g., A4, A6, A7). A6 said, "I still look at my peers to see what they are doing." Specifically, observing peers could help in developing your "own version" of life skills. A4 explained:

> I think, well with peers, the other athletes that I train with, just being able to watch them train and see their skills and see how they sort of do things help you develop your own version of these skills. You all work on the same skills, and then you figure out how to develop them together I guess to an extent.

For some, observational learning was described as "the best kind of teaching" (A5). A5 further explained, "Someone setting an example or showing you how to actually do something [followed by] experience, that's just the biggest help I think." In other words, although many athletes believed observations of others were helpful in learning (A4, A5, A6, A7), their own experience seemed crucial (A1, A2, A8).

5.4.2. Reflections on Experiences: "Reflecting on what I'm doing"

Many athletes described how a wide range of experiences, followed by reflections, helped them to develop life skill. The experiences were not necessarily associated with one particular setting. A6 said, "I think life skills come from every different nook and cranny of your life. That's why different people are different people because of their life experience."

Many of the experiences were explained as “life lessons along the way” (A9). Specifically, having experiences to go along with life skills were described as an opportunity to understand the benefit of life skills. A4 said, “Having an experience to go along with that skill as well helps you realize the benefit of it and continue to use it and find other applications for it I think.”

Most experiences could bring some kind of a learning experience. A4 said, “I think generally if you just go through an experience with someone you are going to learn something from it that you can probably take out of it as a life skill.” The athletes referred to experiences from when they were young (A1), to later in life when they were older and felt they were more or less “forced into” (A6, A8) experiences.

Several of the athletes referred to learning through mistakes, trail, and error. A2 said, he learned “from failing, at least for me. That's messing up.” Then, having a positive outlook on mistakes seemed helpful to learn. A1 said, “Not be like ‘I failed a test, I'm awful’ that kind of thing, so really being able to learn from your mistakes and keep going.” Similarly, A4 explained, “Sometimes things don't go well and then you learn from your mistakes… I feel like even if something doesn't work you can be like learn from that… and then you are learning life skills.”

Sport was one setting in which the athletes could experience and learn from trail and error. A2 said that sport provided him a “consistent platform to test myself” to experience trail and error. Similarly, A8 believed failing in sport could be helpful. He said, “We can take our learnings from biathlon in that way and apply them to everything else. I think just learning from your mistakes and then not letting them stand in the way next time.” Specifically, making mistakes created an unique opportunity to analyze and reflect. A8 explained:

> You have to analyze your mistakes, realize what you did wrong in your mistakes and then you have to move on from them and not dwell. So, it’s not just forgetting about your mistakes. Then you don’t learn anything. You have to look at your mistakes, learn from them and then put them in the past. I think that’s something we’ve learned to do pretty well.

Although a wide range of experiences were helpful, specifically reflecting upon those experiences seemed important to develop life skills. A6 said, “But you don’t realize it until afterwards once you do the reflection and all that.” Further, A3 said, “Being able to reflect on what you are doing and how to improve what you are doing is huge.” Reflections included various emotions and thought processes. A5 said “I just think it is experience and the feeling you get afterwards.” Further, A9 explained when she noticed the benefit of a skill, she would continue to use it. She explained:

> It worked for me now, why would I go back? Working hard once you see things pay off. You don’t go back on that once it happens once. I think you have to try something and it works for you, it just sticks with you. For me at least.

The athletes tried to describe how they reflected upon experiences. A2 said, “You go back, like ‘here it goes’ but yeah, at least I know I can do it.” Some athletes described that reflections came after the experiences, and would contribute to learning of life skills. A5 explained:

> You make mistakes and then you think you better not do that next time… I guess you just do something else next time and then you know you have learned. Maybe; “that last time I did this it wasn't such a good thing, maybe I should do something else next time?” That’s just you are growing.

Time seemed to be another important element to develop life skills. Both time to *experience*, but also time to *reflect*. When the athletes were younger, some believed they would experience more “eureka moments” (A9) in developing life skills, whereas later in life, life skills were more “brushed up on.” A9 explained:

> I guess it does change over time because obviously when you’re younger there’s just so much is new and everything you do. You’re learning something and you’re probably gonna get some kind of life lesson out of it… But now these days I would say it’s more just brushing up on… the skills that I have and maybe possibly learning a few more ones along the way.

Similarly, A7 explained how reflections on those experiences were important to her learning. She explained:

> Just putting in the hours and also reflecting on what I'm doing kind of. If I just put in a lot of hours and not really look back, I'm like "OK those were cool." But if I'm; "OK, I did all those hours for a purpose."

Although most of the athletes believed that both experiences and reflections influenced their life skills development, it seemed hard to explain the timeline. Rather, it was perceived as an ongoing process. A9 said, "I can't really pinpoint exactly the timeline but I would say you keep working on the skills. You might learn them initially but then it takes some time to really nail it [life skills] down."

5.4.3. Automatic: "It's just something that comes with the sport"

Some participants also believed that certain life skills were developed automatic. Those skills were explained as being "developed naturally" (A2, A5) and/or "just happen" (A1, A4) as a result of their involvement in sport. The athletes had various explanations as to why some of their life skills were developed more 'automatically', ranging from their enjoyment and motivation for the sport, to explaining how the skills might be a part of the requirements of doing high-level sport.

Some of the athletes believed life skill developed automatically as a result of their enjoyment and motivation for the sport (e.g., A3, A4, A7). For example, A4 described how sport is "something that you have to want to do." As a result, A4 explained:

> It's just doing the sport and again wanting to do the sport and wanting to be the best that I can be in biathlon sort of makes you do these things… At some point, it's more mental aspect and you just sort of have to want it.

Similarly, A5 believed:

> If that's what you want to do in biathlon you work hard, and you want to do a good job. And after you are done it's like okay you'll continue. That's just automatic after a while and you just continue to do that.

Sport were perceived a huge part of the athletes lives and described as a potential reason why some skills were developed automatic. A3 explained:

> Probably because biathlon is such a big aspect of my life and in anyone's life who is in it that you'll just start doing things that you do in biathlon without even knowing it. I catch myself doing it all the time.

Due to their involvement in high-level sport, A8 believed many of his skills were developed automatically as a result of the sport, something that also helped him to learn the life skills faster. He explained:

> I think all of them [developed] more automatically because it's really life in a way that we wouldn't have experienced earlier… We learned those kind of automatically through biathlon and I don't think those would have developed until later on if we weren't.

At this stage of their sport involvement, A6 explained how doing biathlon at a high level had specific requirements to athletes that could contribute to develop some skills more automatic. He said, "Everything that's required I guess of a biathlete. Like it's required as a biathlete and you have to have it, so that's why it becomes autonomous." A7 believed that both the time and expectations of a high-level athlete contributed to automatic development. She said, "Just because of all the hours put in I guess… It's just something that comes with the sport and comes with the level that I'm at."

Although the discrepancies to how sport contributed to automatic learning and transfer of life skills, most of the athletes seemed to believe that although life skills could develop automatically, interactions and help from others were beneficial. A7 said, "I think automatically they [life skills] do, but I feel like it'd be a lot more of a struggle… I think that yes you could figure it [life skills] out on your own but it'd be a lot harder."

CHAPTER 6
Discussion

The purpose of this study was to examine the development of life skills through sport participation among young high-level athletes who are part of a talent development program. The athletes were asked to explain what life skills they have developed, how they were learned, and how they transfer these skills from sport to life. The results were organized by a table presenting what life skills were developed, divided in three categories, namely: life skills learning contexts (captured by the themes of sport context, other contexts, and family context), PYD climate (captured by the themes of parents, coaches, and peers), and implicit processes (captured by the themes of observational learning, reflections on experiences, and automatic).

When using ID methodology, Thorne (2016) recommend conceptualizing a 'claim' in light of the study findings. The claim is intended to make the key findings more accessible and easier to understand. Accordingly, the following conceptual claim was developed based on current study findings: *Life skills are learned in multiple contexts (i.e., school, work, home). More specifically, in sport, social agents (i.e., parents, coaches, peers) create a PYD climate that facilitates athletes' development of life skills. Athletes implicitly learned life skills through cognitive processes of observational learning and reflections on experiences across various contexts, both inside and outside sport.*

In the next section, the main findings (table and categories) will be discussed. Later in this chapter, the conceptual claim will be reflected upon in light of current state of knowledge within the field of life skills development. Then, implications of the current study will be highlighted considering ways in which implicit processes can be facilitated through life skills interventions, and how and why sport organizations should embrace other contexts of athletes' lives. Finally, limitations and strengths of the study will be presented.

6.1. Development of Personal and Social Life Skills

A recent literature review regarding PYD outcomes in high-level sport stated that athletes would develop more personal skills (Rigoni et al., 2017). The findings in this study were consistent with this statement, identifying more life skills in the personal domain. For example, athletes reported that they learned about hard work ethics, stress-management, and organizational skills from their involvement in high-level sport. These types of skills are consistent with other studies of young high-level athletes (e.g., Hardcastle et al., 2015; Jones et al., 2011). Improved personal skills such as focus and being mentally strong were perceived as a result of participating in high-level sport. These skills have also been identified as psychological characteristics (i.e., personal and social life skills; Hodge, Danish, Forneris, & Miles, 2016) across studies of older high-level athletes (Gould et al., 2002; MacNamara & Collins, 2010).

Life skills in the social domain have received extensive attention in sport psychology literature, especially within the team sport setting (e.g., Holt et al., 2008). Some researchers argue that social skills may be particularly important for athletes in individual sports as they might not occur based upon the nature of the sport (i.e., social interaction; Jones et al., 2011; Pedersen & Seidman, 2004). The findings of the current study do, however, show that most of the athletes reported some social skills (e.g., communication, teamwork), which have been argued to be the most important life skills to develop through youth sport (Jones & Lavallee, 2009a). Current findings propose that young high-level athletes involved in individual sport could develop similar life skills, both personal and social, as team sport (Holt & Jones, 2008). These life skills are also identified across studies in various youth sport contexts (e.g., Holt et al., 2009; Papacharisis, Goudas, Danish, & Theodorakis, 2005), suggesting that PYD outcomes can be fostered, despite different program focus (i.e., recreational vs. high-level).

6.2. Life Skills Learning Contexts: A Combination of Sport and Other Contexts

In sport psychology literature, the sport context has been extensively studied to understand *how* sport benefits the development of life skills (e.g., Camiré et al., 2013; Gould & Carson, 2008). The sport context has to be appropriately structured based on supportive interactions with social agents who help form the PYD climate in order for youth to gain experiences that will contribute to life skills (Holt et al., 2017). The

findings from the current study suggest that the talent development program athletes belong to were appropriately structured to facilitate PYD outcomes.

In relation to high-level sport, previous studies have identified how athletes develop life skills through interventions with an explicit focus to teach life skills (e.g., Hardcastle et al., 2015; Jones et al., 2011; Pierce et al., 2016). The current study adds to the life skills literature examining how young high-level athletes develop life skills implicitly in the absence of an explicit life skills program focus. Specifically, high-level sport was perceived as a viable context to develop life skills in relation to competitions, training camps, and the extensive amount of time devoted to training. The positive associations with competitions are important as previous studies on PYD have suggested both positive and negative outcomes from the competitive aspect of sport (e.g., Camiré & Kendellen, 2016; Hansen, Larson, & Dworkin, 2003). Study participants believed competitions in high-level sport introduced them to experiences they would not have elsewhere, helping them to develop skills that could also benefit them in other life settings (e.g., school). Additionally, training camps were identified as an important opportunity to develop life skills and associated with feelings of intensifying the sport experience. This finding is in accordance with Pierce and colleagues' (2016) study investigating if and how life skills developed through a challenging camp environment. While the wrestling camp in Pierce et al.'s study had an *explicit* goal to develop life skills, findings from the current study add how athletes can *implicitly* develop life skills through high-level sport.

The extensive amount of time associated with participating in high-level sport were also perceived as helpful to develop life skills. Some researchers have, however, found that the time in high-level sport may leave some athletes feel isolated (Strachan et al., 2016), suggesting reduced time in other contexts could potentially hinder psychosocial development (Strachan et al., 2011). Athletes in the current study, however, explained that the time they put into training assisted in developing life skills through interactions in the sport environment and the perceived need to have life skills to deal with sport and other life endeavours. These contradictory findings illustrate the need for future research to understand how time in sport influence PYD outcomes (Côté et al., 2008).

Although this study focused the development of life skills through participation in high-level sport, the athletes acknowledged the importance of having other contexts in their lives (e.g., school, work, home). Specifically, these findings suggest that the combination of sport and other life contexts were vital for young high-level athletes to develop life skills. This is an unique finding and the current study adds to the sport psychology literature on how life skills may be developed through sport – *in combination with other contexts.* The current findings represents a different perspective than past research on life skills development, which focuses on life skills associated with features of the sport context alone (e.g., Holt et al., 2008; Jones & Lavallee, 2009a), or merely on identifying *where* individuals transfer life skills (e.g., school, work; Bean, Kendellen, & Forneris, 2016; Kendellen & Camiré, 2017).

The athletes in the current study viewed other contexts as important also in terms of their enjoyment in sport and life. In fact, investing time in other life contexts are consistently highlighted across studies to achieve "holistic" talent development (Henriksen et al., 2010a; Stambulova & Alfermann, 2009), that can potentially assist in transitions in sport (e.g., from junior to senior level; Stambulova et al., 2009; Wylleman et al., 2004), and make transitions out of sport easier (e.g., McKnight, Bernes, Gunn, Chorney, Orr, & Bardick, 2009). For example, the athletes in the current study illustrated how they use life skills to benefit them within sport (e.g., training, competitions), and outside sport (e.g., school, home). While developing life skills through a combination of contexts are relatively novel, it is consistent with previous studies highlighting how different contexts can benefit the athlete as a 'whole' person (Henriksen et al., 2010a; 2010b).

The family context (i.e., the interactions with parents and siblings outside of sport) was considered important for the athletes in the current study to develop life skills. Specifically, some of the athletes described how the family context fostered independence, social support, and opportunities to learn. Previous research suggests the broader emotional climate and dynamics within the family context are important for athletes to achieve positive outcomes through sport (Holt & Knight, 2014). Despite lack of research on the broader family dynamics in sport psychology literature (Holt & Knight, 2014), our findings are consistent with studies highlighting the emotional

climate and an autonomy supportive family context as helpful to achieve PYD outcomes in terms of life skills (Grolnick, 2003; Lauer, Gould, Roman, & Pierce, 2010).

While scholars agree that skills need to be transferred to other life contexts to be truly considered a life skill (Gould & Carson, 2008), findings from the current study moves beyond that definition and highlight the importance of the combination of multiple contexts to develop life skills. Scholars highlight the need to establish PYD outcomes that transcend sport by expanding the focus "outside of the sport setting" (MacDonald & McIsaac, 2016, p.94). The current study adds to the literature by confirming this notion, while highlighting the need for future studies to look at how other athletes', at different ages and levels of sport, view development of life skills in a combination of contexts (e.g., school and sport). This should be possible considering the large number of life skills studies in high school settings (e.g., Camiré et al., 2009a; Hayden, Whitley, Cook, Dumais, Silva, & Scherer, 2015; Holt et al., 2008).

6.3. PYD Climate: Life Skills Development Through Positive Relationships

The favorable interactions in the microsystem of sport have been extensively investigated in sport psychology research (e.g., Côté, 1999; Fraser-Thomas et al., 2008; Gould & Carson, 2008), and are an influential component to achieve PYD outcomes through high-level sport (Strachan et al., 2016). Similarly, this study highlighted how young high-level athletes perceived the importance of positive relationships with parents, coaches, and peers in the sporting context to develop life skills.

The athletes in the current study perceived their parents as highly involved and supportive in sport, which is consistent with previous studies that have shown that parental support can positively influence the overall sport experience (Harwood & Knight, 2015), and development of life skills (Lauer et al., 2010). Specifically, findings illustrated how parents changed their involvement in sport throughout the athletes' careers, which is considered to be a feature of sport parenting expertise (see Harwood & Knight, 2015). Studies have identified that parents are particularly influential at early stages of athletes' careers (Camiré et al., 2009b; Côté. 1999; Harwood & Knight, 2015). Athletes in this study perceived parents to be more involved and assisting their development of life skills, particularly when they were younger. This is similar to

studies highlighting how parents may promote positive values (Neely & Holt, 2014), and use teachable moments through sport (Holt et al., 2009). While the use of teachable moments is associated with earlier stages of sport participation (Neely & Holt, 2014; Lauer et al., 2010), some athletes in the current study found that their parents still used some teachable moments to emphasize life skills. At the current stage of their career, most of the athletes perceived their parents as providers of mainly social and emotional support (Lauer et al., 2010; Rees & Hardy, 2000; Wuerth et al., 2004). Specifically, parents use of encouragement and behaviours fostering independence were perceived as positive, all of which have been highlighted as helpful to foster positive outcomes through sport (Holt & Knight, 2014).

The findings from the current study contributes to the literature depicting how young high-level athletes believe coaches influence life skills development. In similarity to other studies, these athletes appreciated a strong relationship, highlighting coaches' positive behaviors acting as good leaders and role models (Chinkov & Holt, 2015; Rigoni et al., 2017). Scholars have suggested that a strong relationship may be a result of the extensive time coaches and athletes spend together in sport (Camiré, Forneris, Trudel, Bernard, 2011). This was reflected in the current study by some athletes describing how they have had the same coach over several years, which influenced the coach-athlete relationship positively.

Most life skills research tends to encourage a more structured approach to teaching life skills with a focus on explicit coaching strategies (e.g., Camiré et al., 2012; Kendellen, Camiré, Bean, Foneris, & Thompson, 2017; Trottier & Robitaille, 2014). However, the athletes in the current study were uncertain of the extent to which life skills developed as a result of explicit strategies and seemed to believe that a strong coach-athlete relationship was more influential to learn and transfer life skills than the explicit strategies. This study reveals how young high-level athletes perceive coaches acting as good role models, and how creating a positive environment for training can positively influence life skills development within a talent development program. These findings confirmed that coaches are influential to create a PYD climate (Camiré et al. 2013). In turn, these positive interactions and experiences with coaches facilitated athletes' implicit processes to develop life skills.

The findings of this study offer important insight as to how athlete-peer relationships may influence learning of life skills within high-level sport. Previous studies have emphasized the importance of peers to create close friendships and a sense of belonging (Fraser-Thomas et al., 2008). Specifically, researchers have addressed how peers enhanced positive sport experiences, mainly considering the time they spend together in sport (Strachan et al., 2016). In the current study, athletes appreciated having peers to go through the sport experience together, creating opportunities to observe them, then, use this information to develop their own life skills. These findings are somewhat consistent with previous studies, in particular, how older athletes value the support from peers to develop life skills (e.g., Chinkov & Holt, 2015), suggesting peers can serve as role models that contribute to a PYD climate within high-level sport (Gould et al., 2002; Durand-Bush & Salmela, 2002).

Overall, athletes in the current study identified parents, coaches, and peers as providers of support, positive experiences, and strong relationships. Based on the model of PYD through sport, these findings suggest that high-level sport could create a PYD climate that were beneficial to develop life skills. The current findings support to the fact that it "is the way in which competitive sport programs are structured and delivered (by parents and coaches) that will influence adolescents' experiences", alongside positive peer interactions that create conditions for PYD outcomes (Holt & Sehn, 2008, p.30).

6.4. Implicit Processes: The Use of Observations and Reflections

The notion that life skills is a developmental *process* have made it increasingly important to apply theoretical frameworks to make clear how life skills are learned and transfer (Gould & Carson, 2008; Pierce et al., 2017), through implicit or explicit processes (Holt et al., 2017; Turnnidge et al., 2014). By using the model of PYD through sport this study brings important insight about the implicit processes of transfer. While the study participants acknowledged that parents and coaches used some form of explicit strategies throughout their career (e.g., reminders, teachable moments), athletes identified mostly their use of implicit processes to develop life skills. Holt et al. (2009) found that athletes were the biggest influence to develop life skills, while supportive social agents were a prerequisite to influence the implicit processes. Similarly, the current study emphasized the importance of social agents, while highlighting specific

psychological processes to learn and transfer life skills. Although it was not a definite process, a trend was identified whereby the participants indicated most often psychological processes of observational learning and reflections on experiences.

Observational learning theme includes learning from others by observing them and/or look up to role models. While observational learning has not necessarily been extensively highlighted in the life skills literature per se, learning through observations are suggested to be a crucial way for individuals to develop skills and knowledge (Ferrari, 1996). In the current study, participants described observations as helpful to understand how others use and/or apply life skills across domains. While this is a unique perspective of how life skills can develop implicitly, observational learning is a well-known technique to perform and develop motor skills (Wulf, Raupach, & Pfeiffer, 2005). For example, the combination of observations and physical practice are suggested to assist in more flexible practice of motor skills (Wulf, Shea, & Lewthwaite, 2010). This notion was reflected by the pattern of how athletes developed life skills; to have someone set an example, followed by the athletes' own experiences (e.g., A3, A5).

Despite lack of examples from PYD research, observational learning is considered helpful in other psychological constructs, such as self-efficacy. Specifically, 'vicarious experiences' are acknowledged as a potential influence of personal efficacy (Bandura, 1977). In the current study, athletes explained how they learned by observing others, in particular, people they identified as role models. Role models are consistently highlighted as influential to develop life skills (Camiré et al., 2012; Gould & Carson, 2008). For example, coaches (Gould & Carson, 2008) and older athletes and peers (Chinkov & Holt, 2015) have been identified as role models across studies on developing life skills through sport. While role models are identified in previous studies, the current study addresses a unique aspect of describing how observing role models was a strategy to learn and transfer life skills. This idea needs further investigations to see the ways in which observational learning function as an implicit strategy for other athletes to gain life skills.

Reflection on experiences was another process identified by the athletes to help them develop life skills. Findings from the current study support the idea that experiential

learning can develop life skills (Jones & Lavallee, 2009b), while adding that reflection upon those experiences are necessary to transfer the skills. Reflections are postulated to increase the likelihood of successful transfer (Allen, Rhind, & Koshy, 2015; Gould & Carson, 2008), and is identified as a stragegy program facilitators' may use to facilitate transfer (Turnnidge et al., 2014). Studies have suggested how coaches should reinforce and remind the athletes to reflect (Camiré et al., 2011; Rigoni et al., 2017) by taking an explicit approach of structured debrief (Allen et al., 2015; Bean et al., 2016).

Although the process of reflections is consistent with previous life skills research, the ways in which the athletes described their use of reflections is a rather unique aspect of these findings. Findings suggest that reflections do not necessarily need to become a result of an explicit approach but may provide initial evidence that some athletes engage in the implicit process of reflections to influence learning and transfer of life skills. Athletes in this study pointed out that learning was a result of reflecting on experiences such as making mistakes, trail and error, and/or opportunities to be independent which created unique opportunities to analyze and reflect. Previous studies have explained how parents may help athletes grow through adversity in sport by encourraging reflections (Tamminen & Holt, 2012). In the current study, the reflections seemed to be initiated by the athletes themselves.

While observation and reflections were consistently highlighted as a strategy in this study to develop life skills, some athletes believed life skills could also develop automatically. These findings are to some extent similar to studies of athletes (e.g., Jones & Lavallee, 2009b) and coaches believing in automatic transfer (e.g., Trottier & Robitaille, 2014). Most scholars have, however, contradicted this view of life skills as an automatic by-product of sport (e.g., Coakley, 2016). The athletes had various explanations as to why some life skills developed more 'automatic', ranging from their enjoyment and motivation, to explaining how the skills were associated with the time and the need of life skills in high-level sport. Although these associations have not necessarily been linked to automatic life skills development per se, the current findings may suggest that athletes that enjoy their sport context have better chances to develop life skills (i.e., motivational climate; Gould & Carson, 2008; Hodge et al., 2016;

MacDonald, Côté, Eys, & Deakin, 2011), and provide support to the notion that time is important for transfer (Danish, Petitipas, & Hale, 1993; Pierce et al., 2017).

Researchers have explained that the psychological processes athletes use to influence learning and transfer of life skills as mostly tacit (e.g., Hager & Hodkinson, 2009; Pierce et al., 2017). An unique finding of this study is that, unlike previous studies focusing on life skills transfer, the young high-level athletes were able to describe how implicit processes occurred. Similar to previous life skills transfer research, these athletes explained life skills development as a process occurring over time (Pierce et al., 2017), identifying the use of implicit strategies to facilitate life skills transfer.

While most studies advocate for an explicit approach to develop life skills, the current study is rather unique, offering explanations to some of the psychological processes that influence the implicit processes, providing insight to the explicit-implicit dichotomy (see Carson Sackett & Gano-Overway, 2017). Overall, the current findings add to the literature because they illustrated that (1) young high-level athletes can develop life skills through sport, however (2) did not appear to be developed in high-level sport only, rather, in combination with other contexts, and (3) explained implicit processes of how they learn and transfer life skills. The findings of this study demonstrate that implicit processes occur, and that observational learning and reflections was essential for these athletes to develop and transfer life skills. Therefore, from an applied perspective, an implication from this study is that coaches and sport psychologists may wish to develop these skills in their athletes as a means to facilitating implicit transfer.

6.5. Conceptual Claim

The conceptual claim of this study is that: Life skills are learned in multiple contexts (i.e., school, work, home). More specifically, in sport, social agents (i.e., parents, coaches, peers) create a PYD climate that facilitate athletes' development of life skills. Athletes implicitly learned life skills through cognitive processes of observational learning and reflections on experiences across various contexts, both inside and outside sport. The next section will link the claim to the concept of other contexts, and the concepts of age, cognitive maturity, and implicit processes. How these findings and ideas might warrant further investigation in future research will be discussed.

6.5.1. Involvement in Sport *and* Other Contexts to Develop Life Skills

Pervious literature on life skills rarely focuses on the environmental factors outside sport (Piece et al., 2017). Scholars in sport psychology have mainly focused on how life skills develop through sport (Holt et al., 2008; Jones & Lavallee, 2009b), then, focused on other context in terms of where the skills transfer (Pierce et al., 2017). This notion is explained through sport specific PYD frameworks and research (e.g., Holt et al., 2017). While Pierce et al. (2017) recognize "the development of life skills can occur in many learning contexts… [as] individuals constantly move from one context to another in daily life" (p. 195), their model, similarly to other PYD frameworks, explain life skills development in light of sport. While this study focused on how participation in high-level sport influence development of life skills, athletes highlighted the importance of other contexts throughout this study, and as such, provide support the notion that "life skill development and transfer do not happen in a vacuum" (Pierce et al., 2017, p.197).

Although the model of PYD through sport (Holt et al., 2017) and the model of life skills transfer (Pierce et al., 2017) take an ecological system approach to describe factors influencing PYD outcomes, the models mainly focus on the microsystem of sport. In the current study, the interactions in the microsystem of sport (i.e., athlete, parents, coaches, peers) facilitated the athletes development of life skills, which are consistently highlighted across life skills research (e.g., Camiré et al., 2013; Holt et al., 2009; Pierce et al., 2016). While the impact of the microsystem of sport is well established, one way to improve research on life skills development through sport is to look at the influence of sport in *combination* with other microsystems, such as school, home, and/or work.

Lee and Martinek (2013) argued that to understand transfer of life skills, it would be helpful to understand the many contexts and life experiences that influence youth. As illustrated by the current study, when the athletes moved between sport into a different microsystem (e.g., work, school), life skills developed (e.g., stress-management). Further, Lee and Martinek (2013) explained that the interactions between microsystems create mesosystems and highlight the importance of being "mindful of the numerous life experiences youth have in a variety of contexts (e.g., peer group, family, and school)" (p. 305). They suggested a mesosystem lens to investigate life skills development could help to understand the issue of transfer more clearly. The current

study builds support to the notion that to better understand the process of life skills development, researchers should acknowledge mesosystems. Most life skills models are in fact inspired by Bronfenbrenner's (1995) bioecological model, suggesting the PYD frameworks could potentially incorporate other microsystems in addition to sport.

6.5.2. A Link Between Age, Cognitive Maturity, and Implicit Processes

While there is support for the explicit processes and strategies (Gould & Carson, 2008), implicit processes need to be further understood, as both are likely to occur (Carson Sackett & Gano-Overway, 2017), and may vary according to age, cognitive maturity, and competition level of the athlete (Camiré et al., 2012; Turnnidge et al., 2014). Recent studies have considered the potential of learning life skills more implicitly through social interactions (Holt et al., 2009), in an atmosphere conducive to develop life skills (Chinkov and Holt, 2015), influenced by the individual's ability and openness to reflect (Pierce et al., 2016). While these studies have mainly focused on the characteristics of the environment to facilitate implicit processes (i.e., PYD climate), the current study depicts *how* these processes can occur (i.e., observations, reflections).

One of the reasons these studies have illustrated implicit processes might be a shift in age of the participants in life skills studies, from early to late adolescence. Camiré and colleagues (2012) conducted a study to investigate coaches and athletes (age 13-18) view on life skills transfer. They suggested that «cognitive development can vary as adolescents move from early to late adolescence», proposing different transfer abilities between younger and older athletes. By understanding the processes of life skills learning and transfer (e.g., observations and reflections), the influence of the PYD climate in sport (i.e., social agents), and other contexts (e.g., school, work, home), the athletes in this study reflected qualities of cognitive maturity as outlined by Camiré and colleagues (2012). Cognitive maturity related to life skills development was explained as having "acquired the necessary cognitive capabilities to be aware that the skills learned in sport can be transferred to other aspects of life" (Camiré et al., 2012, p. 257).

Turnnidge and colleagues (2014) explained that implicit transfer may depend upon the athletes' personal characteristics (e.g., age, competition level) and preferred coaching style. Considering the athletes in this study preferred a 'tough' coaching style, are

middle to late adolescence (age 17-21), and participate in high-level sport, this highlight how a sport program for young high-level athletes might advantage from an implicit approach due to "the specific aims of the program, as well as the characteristics and needs of the participants" (Turnnidge et al., 2014, p. 213). The athletes in the current study supported this notion by demonstrating ways in which the implicit processes occurred. These examples came to light by having purposefully recruited athletes from the same sport, same team, around the same age (i.e., ages 17-21), which are considered older than most participant in life skills research to date. While explicit transfer is mainly supported and studied across youth sport contexts (e.g., Camiré et al., 2011), this study, along with a few others, highlight that implicit transfer may occur in high-level sport (Jones & Lavallee, 2009b), and/or in older athletes (Chinkov & Holt, 2015). This is an important finding for future PYD research because several studies that investigate participants in late adolescence have implied implicit processes (e.g., Chinkov & Holt, 2015; Hayden et al., 2015; Jones & Lavallee, 2009b).

6.6. Implications

These findings highlight the potential for PYD outcomes in high-level sport, identifying that life skills can develop implicitly as long as a PYD climate are present. The current study was based on a strong conceptual framework, using the model of PYD through sport, which allowed for a better understanding of the outcomes associated with a particular context. Although the findings of this study are specific to this sample and context (Thorne, 2016), they offer important implications for (1) future life skills interventions for young high-level athletes, (2) how and why sport organizations should acknowledge other contexts outside sport, and (3) future research on life skills development. These suggestions, taken together, may help to promote research and practice of PYD in high-level sport.

6.6.1. Life Skills Interventions for Young High-Level Athletes

Previous life skills interventions for young high-level athletes have applied an explicit approach to teach life skills with limited to moderate effects (e.g., Hardcastle et al., 2015; Jones et al., 2011). The findings from the current study may suggest that interventions designed to promote implicit processes could be better suited for young high-level athletes. Based on current study findings, two potential life skills

interventions could focus on implicit processes by (1) promoting favourable interactions in the relationship with coaches and peers (Holt & Sehn, 2008), and/or (2) creating opportunities for observational learning through a peer-mentorship program (Andrews & Clark, 2011).

First, the findings of this study suggest that life skills development can occur in high-level sport as long as favourable relationships are present within the sport context. These findings suggest that future interventions in late adolescence should focus on the interactions with coaches and peers (Holt & Sehn, 2008). Instead of an explicit focus to teach life skills through an educational based program, the current study suggests that life skills can develop through supportive social interactions in the sporting context. Promoting favourable conditions in sport can potentially increase the enjoyment within the program, allowing for positive interactions with peers (Fraser-Thomas & Côté, 2009) and coaches (Camiré et al., 2013), which are proposed to contribute to positive outcomes such as personal development (MacDonald et al., 2011) as well as being a critical component for continued involvement in sport (Henriksen et al., 2010a).

Second, given that the athletes appreciated observational learning of role models, one way to facilitate this could be through a mentorship program. Perhaps, rather than focusing on specific life skills, these interventions could be designed to have junior athletes learn from senior athletes acting as peer mentors. A peer mentoring program in high-level sport could potentially promote reflections, observations, and role modeling of how older athletes deal with demands of a high-level lifestyle. While mentoring is suggested to be an 'external asset' in PYD frameworks (e.g., Petitipas et al., 2005), mentoring in youth sport tend to focus on coaches (e.g., Gould et al., 2007; Petitipas et al., 2005). Peer mentoring have, however, been well established and researched in other fields (e.g., nursing, education and business) for motivational and learning purposes to achieve successful transitions. For examples, universities have provided access to peer mentoring for social and academic support for new students (Andrews & Clark, 2011). The presence of both formal and informal approach to peer mentoring may be an opportunity to discuss and reflect upon life skills, which is deemed as important for transfer (Allen et al., 2015; Bean et al., 2016; Gould & Carson, 2008), and may be

reinforced though peers serving as role models, contributing to a positive environment in high-level sport (Gould et al., 2002).

6.6.2. Sport Organizations' Support of the Whole Person

In this study, the athletes identified life outside sport as important, both for their enjoyment and development of life skills. Rather than a sole focus on athletic development, sport organizations should provide opportunities for athletes to pursue other contexts (e.g., school, part-time job) while competing at a high-level (e.g., internationally). Instead of encouraging athletes to only pursue sport, the sport organizations should focus on how to achieve their missions statements (e.g., the 24hrs athlete; Biathlon Canada, 2006) and be supportive of the athlete as a whole person. One way to address this may be to offer help to athletes on how to combine sport and life (Stambulova et al., 2009). For example, the sport organization could offer help to communicate the season plan to athletes' educational program and/or job. This type of support is offered to young high-level athletes in the Danish sport system where the national elite sport association are in continuous dialogue with the athletes' schools to help with potential issues related to combining education with high-level sport (Henriksen et al., 2010a). This requires communication channels between sport and other contexts of athletes lives (Strachan et al., 2011), but may be an important step towards avoiding dropouts due to challenges of combining high-level sport and other contexts.

While the athletes in this study achieved outcomes advocated in the Biathlon Canada LTAD (e.g., "transfer both knowledge and experiences from one area to another", p. 45), these outcomes were presumably achieved implicitly. According to the athletes, the sport program delivered few explicit strategies. Instead, a PYD climate were identified as present and important to develop life skills. Until implicit and explicit strategies are better established for athletes at different ages and levels (Carson Sackett & Gano-Overway, 2017), this may be a valuable contribution to how sport organizations can achieve their mission statements; to create a PYD climate. Specifically, the model of PYD through sport (Holt et al., 2017) can be used as a tool to frame the broader characteristics of talent development program to structure a PYD climate, that in turn, can facilitate opportunities for PYD outcomes through implicit processes.

6.6.3. Future Research

Given that the current findings suggest life skills are beneficial and achievable through participation in high-level sport, a logical step in this area would be to identify how to better promote PYD outcomes, and whether implicit and/or explicit focus to develop life skills should change according to the athletes' age and competition level (Turnnidge et al., 2014). Specifically, longitudinal research of PYD in young high-level athletes will be necessary to trace and expand the understanding of PYD outcomes in high-level sport (Strachan et al., 2016). Information regarding PYD outcomes (i.e., life skills) may be a useful practical knowledge for sport organizations to achieve their mission statements, and for scholars to identify the potential of PYD across different sport contexts.

Rather than restricting the scope of research to sport context only, future life skill research should also consider the combination of other contexts and its influence on life skills development. Instead of only focusing on the individual in sport, researchers need to consider the interactions in diverse settings (Lee & Martinek, 2013). One way to achieve this is for qualitative and quantitative research instruments (i.e., interview guides, surveys) to acknowledge and ask about other learning contexts, both structured and unstructured activities. In turn, a better understanding of other contexts in the participants lives can provide insight to the issue of life skills transfer more clearly.

Research targeted towards understanding the process of transfer should aim at developing the existing PYD frameworks. This is an important step considering these models will be used to guide future PYD research (Hodge et al., 2012). For example, it would be helpful if existing models of life skills transfer establish how implicit and/or explicit processes occur. Specifically, more research is warranted to investigate the implicit transfer, for example, looking at older individuals involved in high-level sport, as most studies on life skill development tend to focus on younger adolescence (Holt, 2008), in recreational and/or competitive youth sport (Holt et al., 2017).

6.7. Limitations and Strengths

The implications presented in this study must be considered in light of three important study limitations. First, focusing on young high-level athletes' development of life skills

through sport participation in biathlon in Canada restricts generalizability. These findings may not be applicable to programs for younger athletes at different age and competition level, in different sports, or in different cultures/countries, because of differences between sport programs and contexts (Fraser-Thomas & Côté, 2009).

A second limitation is that athletes' negative experiences were not explored in this study. To advance PYD research it is important to include questions about both positive and negative outcomes regarding sport to inform realistic implementations of PYD (Holt & Jones, 2008). While this study extends evidence of the implicit processes to develop life skills in young high-level athletes, future studies should consider how negative experiences in sport influence and/or hinder life skills. This may provide directions to how high-level sport can best produce PYD outcomes (Danish et al. 2003).

A third limitation is that this study only included the perspectives of young high-level athletes. Future studies should triangulate multiple viewpoints within high-level sport from the social agents who help form the PYD climate (i.e., parents, coaches, peers), and how they may influence life skills development. For example, data from family members and coaches could identify if and how explicit strategies were used at different stages of the athletes' careers, while data from peers might provide a greater understanding and more robust perspectives of the interactions within high-level sport. Few studies have investigated perspectives from the PYD climate and the social agents as a whole regarding life skills development (Camiré et al., 2013; Holt et al., 2009).

On the contrary, the strengths of this study are the purposeful criterion-based sample. First, interviewing athletes who are still involved in high-level sport is a strength of this study and allowed for an understanding of how life skills benefit them today, combining high-level sport and other contexts. This exploratory study contributed to an in-depth understanding of the underlying subjective experiences (Thorne, 2016), in young high-level athletes in late adolescent, which is relatively understudied in life skills research to date.

A second strength of this study was the use of the model of PYD through sport (Holt et al., 2017) which was used to inform this study theoretically. While most studies looking

at life skills transfer have been a-theoretical (Pierce et al., 2017), the use of theory helped to inform this research and allowed for a better understanding of the processes of life skills development and transfer in light of the extant literature on PYD. The use of theory is highlighted as a clear need to guide future research and interventions investigating PYD through sport (Carson & Gould, 2008; Hodge et al., 2012).

A final strength of this study was the researcher's role as an insider. The researcher's familiarity with the context (as a former athlete and coach) made it easier to gain access to the data and build trust with participants. Because the researcher understood the background contextual information that they shared (e.g., biathlon examples), participants may have felt more comfortable to share their experiences (Rubin & Rubin, 2012). To "step out of the role" (Thorne, 2016, p. 128) as a biathlon coach and former athlete could however be a challenge, having preconceptions of own experiences that could colour the questions being asked and interpretations of this study. Both technical (e.g., concurrent data collection and analysis) and intellectual (e.g., reflexive journal, critical friends) strategies were applied throughout this study to deal with defensible analytical directions (see section 4.6), and ensure the analysis was grounded within the data (Thorne et al., 1997). After careful considerations, the advantages associated with the insider perspective outweigh the disadvantages.

CHAPTER 7
Conclusion

High-level sport can contribute to the development of young people beyond athletic skills and performance. The current study illustrates clearly how this might occur when young high-level athletes experience an inclusive talent development program that promoted the development of life skills. These skills were beneficial for both personal and athletic purposes and were facilitated without an explicit approach to teach life skills. This study showed that when young high-level athletes experience the presence of a PYD climate within the sporting context, supportive interactions allowed for several key positive experiences. In turn, the athletes in the current study achieved PYD outcomes as a means to implicitly develop life skills.

To date, there has been a significant gap between research and practice in the understanding of how to successfully deliver PYD through sport. This study illustrated how the presence of a PYD climate is one way to make PYD outcomes more tangible in high-level sport. The supportive environmental features allowed for clear opportunities for PYD outcomes through the implicit processes of observational learning and reflections on experiences that facilitated development of life skills. While the opportunities to create a PYD climate within high-level sport are many, findings of this study highlight that variations in athletes' characteristics may be a function of explicit and implicit approaches to life skills transfer that should be tailored differently across ages and youth sport contexts. This study has demonstrated opportunities for coaches and sport psychologists to promote life skills in young high-level athletes by facilitating implicit transfer processes.

Despite the extensive amount of time young high-level athletes devote to achieve their athletic potential, these findings shed light not only on the presence of a PYD climate in high-level sport and athletes' characteristics, but also the importance of the surrounding contexts to develop life skills. This study suggests other contexts must be considered as both relevant and significant to understand the development of life skills through sport because most athletes, regardless of age and competition level, are involved in other life

contexts outside sport. While researchers tend to focus on the sporting context in isolation when studying the positive outcomes of sport, a life where sport and other contexts such as school and/or work are combined into a whole is the reality of these young individuals. Thus, being involved simultaneously in other contexts is likely to influence the development and the transfer of life skills developed though sport participation. Rather than supporting athletes' perception of other contexts involvement as a burden in the pursuit of high-level sport, sport organizations should consider strategies that may facilitate young high-level athletes' involvement and investment in contexts outside sports.

While the physically focused talent development programs may mainly focus on athletic skill development, strategies to achieve "the 24hr athlete" (Biathlon Canada LTAD, 2006, p. 32) as a whole person is important to consider for talent development programs. In this respect, establishing a better structure for high-level sport that also allows for other contexts could facilitate opportunities for athletes to combine sport and life, which in turn might lead to increasing their enjoyment, prolonging engagement, and learning and transferring life skills. By facilitating the development of life skills, sport organizations can also achieve their mission statements by adapting values associated with PYD, facilitating holistic development, and, as such, contributing to "the whole life process, not just athletic skills" (Biathlon Canada LTAD, 2006, p. 32).

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Appendix A: Individual Profiles (A1-A9)

A1 – Individual Profile

A1 learnt about life skills through different experiences, social interactions, and involvement in various activities (e.g., sport, camp, school, band) over time. Learning occurred both alone or with help from others. Specifically, A1's parents appeared to be influential to her learning through conversations, encouragement, and role modeling, that seemed to help A1 become aware of her own life skills. Other people that influenced A1's learning of life skills are her coach and good team members over several years. A1 seemed to believe that her coach in the talent development program over several years had provided her with support, and later, with opportunities to be independent in training, which helped her in developing life skills.

Although it was helpful having someone to remind her and reinforce skills, A1 talked about how it ultimately was up to you to learn them. Some skills were just developed over time through life. Others were developed through trial and error. A1 talked about how her involvement in an individual sport created unique opportunities to be independent. Competing at a high level was perceived as a challenging process that took a lot of time, but in return, exposed her to situations where she has to take responsibility, initiative, manage stress, and push herself. The fact that A1 has the drive and enjoys doing a competitive sport was perceived as helpful in her development of life skills, forcing her to develop useful abilities, such as time management.

A1 believed it is necessary to try different things to learn life skills. Especially, experiences that help you learn who you are. What she described as a "tunnel vision" in life would not be beneficial to develop skills. Instead, A1 believed that a broader mindset and a need to experiment and experience the "full picture" would help skill transfer. Having a lot of activities going on, juggling biathlon, school, and friends had what A1 referred to as a "domino effect" in learning and transfer of skills. When she improved time management in, for example, biathlon training, she was able to spend her time more effectively in other areas as well. However, she emphasized that everyone is different and will acquire and apply skills differently. Ultimately, since sport took up so much of her time it would overlap into life. Everything ends up connecting, something that A1 explained would just make you a good person that can handle the demands and pressures of life.

A2 – Individual Profile

A2 believed that life skills could be developed in competitive sport, however, sport was not necessarily the most economical way of developing life skills. Specifically, 'just' doing biathlon would not develop life skills, but was viewed as a tool and a consistent platform to learn and test himself. A2 believed he had mostly learnt physical skills through sport. To learn life skills, there is a need to have other experiences and activities to get the "full picture" and help in creating a well-rounded person.

A2 developed life skills through sport in conjunction with work. Specifically, being very stretched in everyday life trying to balance work and training. A2 provided examples of long days of work followed by the need to put down hours of training. He reported feeling "stretched" at training camps and on days of hard training. A2 said his most useful learning experiences were when he felt that he: "failed", "messed up", and "burned out". Those experiences were referred to as learning from the extremes, and made him change how he was doing things by learning from trial and error. Sport created opportunities where you could learn important skills. As he explained: "being an athlete is never consistent", and believed you should try to get the full range of challenging experiences through training (e.g., 50 km ski).

Further, A2 expressed that most of his life skills were not taught to him by others. Interestingly, he believed he had missed out on learning the most important life skill, motivation, because he was not necessarily good at putting himself in the right environment. A2 expressed that good peers were helpful, and that others might have tried to give advice that would have filtered through and accelerated his learning by contributing to his general knowledgebase. However, none of those life skills were internalized at the time they were supposedly taught, but instead developed once the opportunities arose later in his life.

Specifically, A2 talked about lack of opportunities in other activities and lack of independence growing up. A2 referred himself as the "elite athlete" in elementary school. Sport was viewed as the scenario that could teach him life skills by providing a consistent platform to test himself, influence his general behavior, and personality. A2 believed once he moved away from home he got the opportunity to learn "every other life skill". He was uncertain whether the life skills acquired would benefit him later in life once he is done biathlon, but admitted it has shaped his personality.

A3 – Individual Profile

A3 believed the learning of life skills happen through various social interactions, being involved in sport, at school, and through experiences. Significant people that have been important to A3 in learning of life skills was his dad and fellow athletes. A3's dad talked about and emphasized skills in addition to exposing him to opportunities to learn. A3 viewed older and better athletes as role models. Specifically, observing how they dealt with sport and other activities (e.g., work, studies) was helpful in learning and applying similar strategies and skills in his own life.

Being involved in biathlon at a competitive level allowed A3 to learn life skills that were beneficial to him in sport. Because biathlon is such a big part of A3's life, when he needed to juggle competing demands, the skills he acquired through sports training would "instantly transfer over", and he would start doing what he normally did in biathlon in everyday life settings. In particular, moving away from home was the scenario A3 often referred to when explaining how biathlon and life overlaps.

A3 explained the life skill learning process as similar to learning sport specific skills: Once you first start you need repetition and practice to master the skills, and you will learn the more you do something. Therefore, learning of life skills are especially hard in the beginning. To learn them better, A3 talked about having experiences of trial and error that can help you realize and reflect. The reflections were related to knowing how to improve them and when to use the skills.

A3 explained you need to experience life skills to know how to develop them: "I don't think that like you can take a skill, like if you had a list of skills. I don't think you can look at it and be like; 'I want to learn that skill' and go out and learn it. You need to experience them." Once A3 noticed the usefulness of a skill and room for improvement, it was easy for him to continue to use them in life to create a routine that will benefit him in sport.

A3 viewed it as "up to you" to learn life skills, but that it was helpful to have some help from others, for example his dad and coaches talking about life skills. It was hard for A3 to think about other activities that could teach him life skills because sport has been such a big part of his life. However, school had taught him some organizational skills along with always having a busy lifestyle when growing up.

A4 – Individual Profile

A4 believed that having life skills are necessary to successfully compete in high-level sport. Based on her own experiences training full-time, having a part-time job, and doing an online course, she believed that life skills were learnt when having a busy schedule, trying to balance daily activities with high-level sport.

Life skills were presumably learnt both alone and from others. A4 developed life skills through experiences of trial and error, and by being forced into different scenarios. Through experience, A4 believed that she got the opportunity to figure out life skills. When trying her best and being aware of how to successfully work with a situation, she found out the need to develop life skills to create a routine. Seeing the benefit of life skills and where to apply them motivated A4 to learn. Specifically, when having an experience to go along with the use of life skills she was able to realize the benefit and continue to use life skills and find new applications for the skills.

Life skills were also learnt from others, such as older athletes viewed as role models. Particularly observing them and how they balance biathlon and life outside sport were helpful because they have gone through a similar challenge. Training with peers at the same level was also perceived as helpful, because they learned from each other and pushed each other to try harder. Additionally, witnessing the learning of younger athletes seemed helpful in her own learning. Further, her family was very supportive in her involvement in sport, and had influenced A4's learning with reminders about the use of life skills in sport and life. Her coaches did however mostly focus on biathlon specific skills. In sum, taking advice and guidance from other people were perceived as helpful, but not necessary for all skills.

The life skills A4 listed during the interview were first and foremost perceived as helpful to her in biathlon. Since biathlon was the main focus and motivation, A4 felt like she shaped her life around biathlon, and could therefore develop life skills. Specifically, A4 talked about motivation and drive in wanting to develop and transfer life skills. Right now, life skills were applied wherever useful. That being said, she talked about how the same skills could probably help after her career in sport as long as she finds something she really wants to do later in life. She did not necessarily think about specific skills, they just "are there" and "happen".

A5 – Individual Profile

A5 believed she got most of her life skills from home, from parents that taught her the overall skills to be a "good person". A5 said she had a hard time remembering life skills that were taught doing competitive biathlon, but that biathlon had exposed her to opportunities such as combining sport, university course, and work. The learning experiences exposed her to situations where she made some mistakes. Learning from trial and error happened both through people explicitly telling A5, or from her own reflections, feelings, and thoughts.

A5 seemed to believe that life skills are just something that you just have to develop, and skills that you need for everything, more than in just one arena. A5 talked about how some life skills purportedly belong to your personality, while others are just a reaction to the way she dealt with things that helped her change and/or develop life skills.

Although most of A5's life skills were learnt at home, she talked about how everyone in your community is likely to be involved in the process of learning life skills, over time, as you go through sport. As A5 described: "You learn as you go, and some teaching always occurs." A5 shared that coaches, parents, and teammates gave her reminders, hints, and tips on how to use life skills. At this stage of her life/career, teammates were the social agents she felt closest to. Peers were viewed as helpful to set an example and explain their life skills by telling stories. Also, observation of what they were doing, learning from how they behave or react through social interactions were perceived as most helpful, especially when these observations were followed by her experiencing a similar situation. Although A5 found help from others somewhat useful, learning life skills would also be something she would just notice in other arenas after a while.

A5 described how she believed that when you are younger there are more guidelines given, which is helpful when learning the 'base' of the skills. Once you are older, you have to figure it out on your own, learn how to handle the skills better, and to develop them further. Over time, A5 believed she would become better at handling life skills. Her life skills would improve, the change would just happen, and the transfer of skills used in sport will just automatically continue after her athletic career as long as she is involved in something she wants to do.

A6 – Individual Profile

A6 explained how life skills come from every different nook and cranny of your life because of your life experience. He did not necessarily realize he was gaining them at the time, but many of his skills were first developed through other activities, and later benefitted him to some extent in sport. For example, work, cadets, and volunteering were experiences he related to his learning. Learning and use of his skills might change according to the situation and the environment. Some of the life skills were related to competing in sport at a high level, whereas others were referred to as "the givens" that will naturally develop and anybody would learn them in sport regardless of setting.

The life skills pertained to A6 were mainly developed being "forced" and experience-based. That is, being thrown into a situation and having to figure it out. A6 only recognized his learning afterwards through reflection, now that he's aware of them, he is confident they will help him overcome challenges in the future. In addition, A6's learning of life skills often happened in interactions with other people. Although it was not necessary for a mentor to tell him "how to", it was helpful to listen and observe them.

A6 explained how observations was perceived as particularly helpful, and something he did in almost everything. The expression "monkey see, monkey do" explained how he had learnt life skills in sport as well as other skills (e.g., playing piano, schoolwork) with time and practice. In particular, A6 believed it is imperative to have good role models. He tried to follow that to the T, and being very self-conscious also helped. Particularly, peers, older athletes, and coaches in the training environment were mentioned as important to observe. The extensive amount of time they spent together training, competing, and going on tour together were an influencing factor.

Most of the skills that were developed through biathlon were perceived as being learnt 'autonomous'. The reason the skills would automatically develop was because they are required as a biathlete to have them. The life skills would remain the same across situations because he is the same person everywhere, and believed that his life skills are related to his personality. Further, A6 believed there will be different arenas where you learn life skills, but that their application is not necessarily different. The life skills he has will never disappear, but may change according to what roles he assumes in life.

A7 – Individual Profile

A7 believed competing at a high level and spending significant amount of time in biathlon forced her to be on top of things, especially related to school and work. Life skills (e.g., motivation, social skills) helped her to overcome challenges in sport and life and were developed in various environments (e.g., biathlon, home, school, and church). Having other things beside biathlon was perceived as necessary to develop life skills. In particular, observations of others and conversation about life skills were perceived as helpful to her learning.

A7's learning experiences occurred in various settings of her life. Outside of sport, she learnt life skills from her parents, school, and church. Conversations about life skills did mostly happen outside of sport (e.g., church, parents). A7 presumably believed that just "growing up", getting older, and maturing benefitted her learning of life skills. As she grew older, she explained that she did not spend as much time with her parents. Instead, she is now spending more time with her friends and the team.

Within sport, A7 learned life skills doing other sports. At this level in biathlon, she explained how particularly the number of hours she put into biathlon and consciously reflecting on what she is doing helped her to improve her skills. At this time of her life, A7 talked about how she spends more time with older role models. Specifically, being the youngest on the team was an opportunity to observe the older athletes and spend a significant amount of time with the team. A7 presumably experienced that life skills come from every aspect of her life, but that a lot of support has been beneficial to her overall development of life skills.

A7 believed that most life skills could automatically be learnt alone over time, however, this would be more of a struggle without help and support from others. She talked about some skills being more in the forefront. The skills A7 had learned up until this point would not necessarily change much in the future, but mature as she gets older. Doing sport was referred to as an "extreme version of life", and that most of the skills she had learnt in biathlon would be transferrable after her career as they were applicable in both areas.

A8 – Individual Profile

A8 perceived high-level sport as no barrier to developing life skills. Instead, biathlon was perceived as a 'trial' form of life, helping him to hone skills that could benefit him in university. Training and competing in high-level biathlon had introduced him to unique experiences such as travelling, training camps, and opportunities for shared hardship with his team. Presumably, it was important to A8 to have different activities in addition to sport. He explained it as having two separate lives, but the importance of having them both to "shut off the brain".

The time he spent in sport developed strong relationships with his team through shared experiences with peers and coaches. A8 talked about how his coach had been very supportive. They had a meaningful relationship. The coach provided workshops that touched upon life skills. Specifically, his coach structured practice to push him out of his comfort zone. A8 explained that he felt he learnt these skills automatically because they were always pushed to their limit and had to adapt. The reminders of the coach helped, but eventually it became automatic and he was able to pick them up himself.

Strong social relationships were also present within his family. A8 gave several examples of how his sister and parents have provided a good example, good genes, social support, and opportunities to learn. The learning opportunities were created by parents in everyday life situations. Instead of doing things for A8, they showed him how, he observed, and then tried to do it himself. A8 said it was not necessarily what people did for him, but what they did not do, that was helpful to him. He also believed that everyone could teach him life skills through conversations and sharing stories of their experiences.

Although A8 emphasized the importance of social interactions, most of his examples of learning of life skills were related to his own experiences and taking ownership for himself and his training. Making mistakes and being forced into situations out of his comfort zone was perceived as some of the most useful learning experiences. Followed by those experiences, he reflected upon them. A8 believed that the basics of the life skills were learnt when you are young, and as you get older you would "climb the ladder" progressing from one level of competence to another.

A9 – Individual Profile

A9 has been involved in biathlon since the age of 8, and believed that the sport had shaped who she is today. Biathlon has taught her several life lessons, especially the competitive aspect of sport. The life lessons she highlighted were mostly from her sporting career and biathlon specific examples such as her first international competition and moving up categories to compete. Although most of her examples were referred to as biathlon specific examples, A9 expressed that she believed it "all connects" and that life skills mesh together.

A9 talked about learning of life skills during big life events such as moving away from home and being out of her comfort zone. Additionally, some skills she realized in school when going through stressful period with finals and when chasing her sisters when she was younger. Most of the learning was initiated by herself, however, through trial and error.

In sport, A9 had several clear examples of how races, training, and becoming competitive on the national and international stage helped her in developing skills. For example, A9 explained when she started out new and had "no idea," that seeing the skills she acquired through initial experiences increased her enjoyment of the sport and motivated her to continue to learn by doing. Further, A9 talked about the bond with coaches and teammates as something that positively influenced her learning. Specifically, coaches helped when repeating tips/hints that would help to 'click' the life skills. The facts that teammates are around the same age and in the same boat were also perceived as helpful in pushing her to improve. Teammates were presumably the biggest support to A9 in learning life skills since they do it together, push, and observe each other.

A9 talked about how the significant amount of time she spent in sport shaped her as a person and how that would just transfer into "full time life" since she is the same person, no matter what she is doing. The life lessons helped her to brush up on things. As she keeps working on the skills she will eventually "nail it". In learning life skills, A9 described how experiencing and hearing about life skills earlier would be beneficial. Few skills stuck with A9 when she was younger, but as she got older it became more of an implicit process, though she still learning.

Appendix B: Informed Consent

Study Title: **An Examination of Life Skill Development in Elite Junior Athletes**

Principal Investigator:	**Supervisors:**
Helene Jørgensen, Visiting Graduate Student Child and Adolescent Sport and Activity Lab Faculty of Physical Education and Recreation University of Alberta Department of Coaching and Psychology Norwegian School of Sport Sciences Tel: (780) 240-9290	Dr. Nicholas L. Holt Professor and Associate Dean – Research Faculty of Physical Education and Recreation University of Alberta Tel: (780) 492-7386 Dr. Pierre-Nicolas Lemyre Associate Professor and Head of Department Department of Coaching and Psychology Norwegian School of Sport Sciences Tel: +47 23 26 24 22 / +47 412 86 724

Do you understand that you have been asked to take part in a research study?	Yes	No
Have you read and received a copy of the attached information letter?	Yes	No
Do you understand the benefits and risks involved in taking part in this research study?	Yes	No
Do you understand that you are free to contact the researcher to ask questions and discuss this study?	Yes	No
Do you understand that you are free to refuse participation, or to withdraw from the study up to four weeks after your interview, without consequence?	Yes	No
Do you understand the issues of confidentiality and do you understand who will have access to your information?	Yes	No
I agree to take part in this study:	**Yes**	**No**

Name: _____

Signature: _____

Date: _____

Appendix C: Information Letter

Principal Investigator:	Supervisors:
Helene Jørgensen, Visiting Graduate Student Child and Adolescent Sport and Activity Lab Faculty of Physical Education and Recreation University of Alberta Department of Coaching and Psychology Norwegian School of Sport Sciences Tel: (780) 240-9290	Dr. Nicholas L. Holt Professor and Associate Dean – Research Faculty of Physical Education and Recreation University of Alberta Tel: (780) 492-7386 Dr. Pierre-Nicolas Lemyre Associate Professor and Head of Department Department of Coaching and Psychology Norwegian School of Sport Sciences Tel: +47 23 26 24 22 / +47 412 86 724

An Examination of Life Skill Development in Elite Junior Athletes

Dear Athlete,

My name is Helene and I am a visiting graduate student under the supervision of Dr. Nicholas L. Holt in the Faculty of Physical Education and Recreation at the University of Alberta. This study is a part of my masters' thesis study: "An Examination of Life Skill Development in Elite Junior Athletes".

The purpose of this study is to examine the development of life skills among elite junior athletes who are part of a talent development program. Specifically, I am interested in your development of life skills that have benefitted you in biathlon, as well as those that you have transferred and applied beyond sport. Life skills are physical, behavioral, or cognitive skills required to deal with the demands and challenges in life. These types of skills may be used both in and outside of biathlon, and have the potential to benefit your development, sporting career, as well as help you maintain a balance between sport and other aspects of your life.

Eligibility
To be eligible to participate in this study you must:

- Have competed in the 2017 Biathlon World Youth & Junior Championships.

Study Procedure
If you choose to participate, you will be invited to complete an individual interview lasting approximately 45-60 minutes. You will be asked questions about your thoughts and experiences about your development of life skill through biathlon that have benefitted you in the sport as well as in other aspects of life.

The interview will be conducted at the Canmore Nordic Centre at a time that is convenient for you. The interview will be audio recorded and transcribed verbatim. After data analysis, you will be emailed a written summary of the results and you will be asked questions about the accuracy of the results. This part will take you approximately 15 minutes, and you will at this point be able to provide additional feedback and comments you might have.

Therefore, the total time commitment for this study is approximately **45-60 minutes**.

Benefits
There are no immediate or direct benefits to you as individuals. By providing your thoughts and reflections on the experiences you have had in biathlon you might become more aware of the skills you attain, that you in turn find helpful in future transfer of life skills. The findings from this study may also help Biathlon Canada address a holistic development of their future elite athletes by better understanding how biathlon affect their junior athletes, both in sport and also general in life.

Risks
There are minimal risks associated with participating in this study. If you experience any of the questions uncomfortable during the interview you do not have to answer it. If you at any time during the interview would like to stop, please let me know and we will stop.

Freedom to Withdraw
This study is completely voluntary. There are no negative consequences if you decide not to participate. All of your data and personal contact information will be deleted upon request. Please contact me within four weeks of your interview if you wish to withdraw from the study

Anonymity and Confidentiality
Once the interviews have been transcribed, your personal information will be removed and your name will be replaced with a code (e.g., Athlete 1). Any information that you provide during the interview will remain confidential. Only my supervisors and I will have access to the data. Hard copies of data will be securely stored in a locked file cabinet within a locked office, and the audio recorded files will be stored on a password protected computer. I am required to keep the data stored for five years after the study. After five years the data will be destroyed. The data from this interview will contribute to a master's thesis study that will be submitted to the Norwegian School of Sport Sciences and an academic journal, but your personal information will not be included in any results presented in academic settings.

This study has been reviewed and approved for its adherence to ethical guidelines by the University of Alberta Research Ethics Board. Any questions you may have about this study may be directed to Helene Jørgensen by email hjorgens@ualberta.ca. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615. This office has no direct involvement with this project.

If you would like to participate in this study,
please contact Helene at hjorgens@ualberta.ca or (780) 240-9290

Many thanks,

Helene Jørgensen
Visiting Graduate Student

Appendix D: REB Ethics

UNIVERSITY OF ALBERTA

Helene Jorgensen <hjorgens@ualberta.ca>

HERO: Ethics Application has been Approved Pro00074529

hero@ualberta.ca <hero@ualberta.ca> Tue, Jul 11, 2017 at 8:58 PM
Reply-To: hero@ualberta.ca
To: hjorgens@ualberta.ca

UNIVERSITY OF ALBERTA

Ethics Application has been Approved

ID:	Pro00074529
Title:	An Examination of Life Skill Development in Elite Junior Athletes
Study Investigator:	Helene Jorgensen
Description:	This is to inform you that the above study has been approved. Click on the link(s) above to navigate to the HERO workspace. Please do not reply to this message. This is a system-generated email that cannot receive replies.

University of Alberta
Edmonton Alberta
Canada T6G 2E1

Appendix E: NSD Ethics

Pierre-Nicolas Lemyre
Postboks 4014 Ullevål Stadion
0806 OSLO

Vår dato: 25.08.2017 Vår ref: 55145 / 3 / LAR Deres dato: Deres ref:

Tilbakemelding på melding om behandling av personopplysninger

Vi viser til melding om behandling av personopplysninger, mottatt 17.07.2017.
Meldingen gjelder prosjektet:

55145	*An Examination of Life Skill Development in Elite Junior Athletes*
Behandlingsansvarlig	*Norges idrettshøgskole, ved institusjonens øverste leder*
Daglig ansvarlig	*Pierre-Nicolas Lemyre*
Student	*Helene Jørgensen*

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database.

Personvernombudet vil ved prosjektets avslutning, 30.06.2018, rette en henvendelse angående status for behandlingen av personopplysninger.

Dersom noe er uklart ta gjerne kontakt over telefon.

Vennlig hilsen

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Marianne Høgetveit Myhren

Lasse André Raa

Kontaktperson: Lasse André Raa tlf: 55 58 20 59 / Lasse.Raa@nsd.no
Vedlegg: Prosjektvurdering
Kopi: Helene Jørgensen, hjorgens@ualberta.ca

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 55145

INTERNASJONALT SAMARBEID

Prosjektet er en internasjonal samarbeidsstudie. Norges idrettshøgskole er behandlingsansvarlig institusjon for den norske delen. Personvernombudet forutsetter at ansvaret for behandlingen av personopplysninger er avklart mellom institusjonene. Vi anbefaler at det inngås en avtale som omfatter ansvarsfordeling, ansvarsstruktur, hvem som initierer prosjektet, bruk av data og eventuelt eierskap.

PERSONVERNOMBUDETS VURDERING

Personvernombudet gjør oppmerksom på at vår vurdering av prosjektet begrenser seg til den behandling av personopplysninger som Norges idrettshøgskole har ansvar for. Dette omfatter students og veileders behandling av personopplysninger i Norge. Datalagring ved Universitetet i Alberta etter prosjektslutt omfattes ikke av vår vurdering, og det forutsettes at personopplysninger som behandles i Norge anonymiseres ved prosjektslutt. Personvernombudet legger til grunn at den kanadiske godkjenningen av prosjektet omfatter behandling og lagring av data i Canada.

FORMÅL

Formålet med denne studien er å undersøke utviklingen av livsferdigheter blant junior eliteutøvere som er en del av et talentutviklingsprogram. Nærmere bestemt vil følgende forskningsspørsmål bli adressert: (1) Hvilke livsferdigheter oppnås? (2) Hvordan læres de? (3) Hvordan overføres livsferdigheter til andre arenaer utenfor idretten? (4) Hva er funksjonene til talentutviklingsprogrammet som kan bidra eller begrense utviklingen av livsferdigheter? (5) Hva er andre barrierer til utvikling av livsferdigheter?

INFORMASJONSSKRIV

Utvalget informeres skriftlig om prosjektet og samtykker til deltakelse. Informasjonsskrivet er hovedsakelig godt utformet. Vi ber imidlertid om at følgende formulering endres eller fjernes: "your identity will be anonymous". Ettersom det finnes en koblingsnøkkel, det tas lydopptak og det innhentes bakgrunnsopplysninger om deltakerne, vil de per definisjon ikke være anonyme. Vi anbefaler også at det kommer klarere frem at masteroppgaven skal leveres ved Norges idrettshøgskole, samt at personopplysninger vil behandles i Norge.

SENSITIVE OPPLYSNINGER

Personvernombudet tar høyde for at det vil behandles sensitive personopplysninger relatert til helseforhold. Begrepet helseforhold skal forstås i en vid forstand, som omfatter opplysninger om en persons tidligere, nåværende og fremtidige fysiske og psykiske tilstand. Personvernombudet mener likevel, basert på en helhetsvurdering av prosjektets art og omfang, at det er tilstrekkelig med samtykke fra deltakerne selv, gitt at de er over 16 år.

TREDJEPERSONOPPLYSNINGER

I intervjuguiden inviteres det til at informantene forteller om sitt forhold til trenere, foreldre og andre utøvere. Personvernombudet gjør oppmerksom på at det som utgangspunkt foreligger informasjonsplikt overfor tredjeperson. Vi anbefaler derfor at informantene rutinemessig minnes om å omtale andre personer på en måte som ikke gjør dem identifiserbare.

I den grad det registreres opplysninger om tredjeperson, skal opplysningene være nødvendig for formålet med prosjektet, av mindre omfang, ikke sensitive, og de skal anonymiseres i publikasjon. Så fremt personvernulempen for tredjeperson reduseres på denne måten, kan prosjektleder unntas fra informasjonsplikten overfor tredjeperson, fordi det anses uforholdsmessig vanskelig å informere.

DATASIKKERHET
Personvernombudet legger til grunn at forsker etterfølger Norges idrettshøgskole sine interne rutiner for datasikkerhet. Dersom personopplysninger skal sendes elektronisk eller lagres på mobile enheter, bør opplysningene krypteres tilstrekkelig.

PROSJEKTSLUTT
Forventet prosjektslutt er 30.06.2018. Ifølge prosjektmeldingen skal innsamlede opplysninger da anonymiseres. Anonymisering innebærer å bearbeide datamaterialet slik at ingen enkeltpersoner kan gjenkjennes. Det gjøres ved å:
- slette direkte personopplysninger (som navn/koblingsnøkkel)
- slette/omskrive indirekte personopplysninger (identifiserende sammenstilling av bakgrunnsopplysninger som f.eks. bosted/arbeidssted, alder og kjønn)
- slette digitale lydopptak

Appendix F: Athletes' Interview Questions

1. Please describe your current involvement in biathlon.

2. What life skills do you think elite youth/junior biathletes need for successful sport performance?

3. What types of life skills have you learnt from doing biathlon at a high level?

4. Tell me about the skills that you learnt outside of sport, for example in school, at work, thought to you by your family and/or friends that have been useful to your development in biathlon.

5. I am interested in whether or not people learn different life skills at different ages. Are there any life skills that you think you developed early in your career?

6. Do you think you learned any life skills more 'automatically' just from doing the sport (i.e., without someone specifically teaching you)?

7. Did anyone teach you about life skills, whether in biathlon or outside of the sport?

8. Can you discuss if you believe competing biathlon at a high level has helped you develop skills that have been useful to you in other areas of life?

9. What factors or type of experiences would you say has been most influential to your relationship with the team (i.e., coaches, peers, and parents)?

10. Can you please describe the training environment created by your coaches and peers?

11. Of all the things we discussed today which life skills do you think are the most important?

12. Finally, is there anything else about life skills and how they might benefit development of elite youth/junior biathletes that you want to mention that we have not covered, or you think we should talk about before we end the interview?

Appendix G: Interview Guide

Preamble:
Thank you for agreeing to participate in this interview. You have been asked to participate because of your level of achievement in Youth/Junior biathlon and the experience you competing/training at a high level. I am interested in getting to know about the skills you have developed through biathlon that have benefitted you in the sport as well as those that have transferred and applied outside of sport. These types of skills will be referred to as "life skills" throughout the interview.

Life skills are defined as physical, behavioral, or cognitive skills required to deal with the demands and challenges in life. These types of skills may be used both in and outside of biathlon, and have the potential to benefit your development, sporting career, as well as help you maintain a balance between sport and other aspects of your life. [My own experience of biathlon and development/use of life skills: "*Hard work ethics", "perseverance", "mental toughness"* → Move to Canada, job, studies, 2nd language]

There is no right or wrong answers. I am interested in your understanding and experiences of life skills. This interview is meant to be a conversation, so please feel free to talk about anything that you feel is related to the question, even if I didn't specifically ask. I want to know everything about your development of life skills and how they benefit you, both in in general and in sport. Whenever possible, please use specific examples of your own experiences during the interview.

Demographics:
I am going to start with some demographic, background information questions.

- How old are you? Where are you from? Do you live with your parents? Do you have siblings? Are you currently enrolled in an education program? If yes, what grade/year are you in? Do you have a job?
- When did you first get involved in sport? What other sports have you participated in? What level did you compete at?
- When did you start doing biathlon? Do you have a specific (i.e., formal) group/club you train with? If yes, how many days/hours per week?

Introductory Questions:
Let's get into some general questions about your involvement and development in biathlon.

1. Please describe your current involvement in biathlon.
   - What level do you compete at?
   - Do you have any long term goals in biathlon?
   - What do you enjoy most about training and competing in biathlon?

Main Questions:
<u>Life skills (PYD outcomes)</u>
There are probably several skills you have learnt over the years throughout your involvement and development in biathlon. I will like to know more about the skills you think are important, the ones you have developed, and the skills you have found useful in sport and life.

2. What skills do you think elite junior biathletes need for successful sport performance(Jones & Lavallee, 2009a)?
- What life skills do biathletes need to manage the demands of other aspects of life such as being a student/working athlete (Jones & Lavallee, 2009a; 2009b)?
- How do you think competing in the sport of biathlon allows you to develop such skills (Kendellen & Camiré, 2017)?

3. What types of life skills have you learnt from doing biathlon at a high level? [Interviewer to make a note of each life skill listed] Are there others you can think of?

I am now going to ask you a couple of questions about each of the life skills. Do not worry if there is some overlap in your answers.
- Please explain what [type of life skill] means to] you?
- How do you think you learned about [type of life skill]?
- Can you provide some examples of how you use [type of life skill] in your life away from biathlon (Rathwell, 2017)?
- In what settings do you find [type of life skill] particularly helpful (Rathwell, 2017)?

4. Tell me about the skills that you learnt outside of sport, for example in school, at work, thought to you by your family and/or friends that have been useful to your development in biathlon.
- In what way has these skills been particularly helpful to you (Rathwell, 2017)?
- How have you applied these skills/behaviours in biathlon (Holt et al., 2009)? [Probe for specific examples]

5. I am interested in whether or not people learn different life skills at different ages. Are there any life skills that you think you developed early in your career?
- Are there other life skills you have developed later as you have gained more experience in life?
  [Probe for specific examples]

<u>Transfer (Explicit / Implicit process)</u>

Considering the skills we have been discussing, I would be interested in knowing more about how you came to develop these skills and specifically how you transfer them to other domains of life. I want to probe for a few more details.

6. Do you think you learned any life skills more 'automatically' just from doing the sport (i.e., without someone specifically teaching you) [Interviewer to make a note of each life skill listed]?
- If yes, how do you think you learned [type of life skill]?
  [Probe for each life skill]

7. Did anyone teach you about life skills, whether in biathlon or outside of the sport?
- What types of things did this person do?
- What things were particularly effective for your learning?
- How has this guidance changed over time?
- Would you have been able to link the use of these skills in other domains without their help?

8. Can you discuss if you believe competing biathlon at a high level has helped you develop skills that have been useful to you in other areas of life (Kendellen & Camiré, 2015)?
- How would you say the skills you learned through biathlon can be transferred to other aspects of life (Camiré et al., 2009)?
- In what ways do you think biathlon influences the skills you have to use outside of sport(Pierce et al., 2017)?
- Can you describe a time when you found life skills particularly useful to help you maintain a balance between doing biathlon and life? [Probe for specific examples] *(e.g., skills you apply daily, in competition setting, at school, university, or work).*
- How do you think that the skills you have developed in biathlon will help you in the future such as at university (Bean et al., 2016)? At work? At home? With friends? [Probe for specific examples]

Context (PYD climate)

I would like to know more about the interactions in your training environment between you, the coaches, peers, and parents in your club.

9. What factors or type of experiences would you say has been most influential to your relationship with the team (i.e., coaches, peers, and parents)?
- What has this relationship meant to your development in biathlon?
- Who are these people (Rathwell, 2017)?
- How are these relationships meaningful (Rathwell, 2017)?
- In what ways have these relationships influenced your sport experience? Examples?
- How would you say your coaches, peers, and parents influenced your learning of the skills that you could apply beyond sport (Pierce et al., 2017; Rathwell, 2017)?
- What behaviours, feedback or interactions from your coaches, peers, or parents facilitated your learning of these skills (Bean et al., 2016; Pierce et al., 2017)? [Probe for specific examples]

10. Can you please describe the training environment created by your coaches and peers?
- How would you describe the focus on performance (achieving competition results) versus personal development in your team/club?
- What aspects of your training environment do you believe have helped you develop the life skills you have talked about?
- On the other hand, is there anything in your club that might hinder your development of life skills?

Summary Questions:

11. Of all the things we discussed today which life skills do you think are the most important?
- Why are these skills important?

12. Finally, is there anything else about life skills and how they might benefit development of youth/junior elite biathletes that you want to mention that we have not covered, or you think we should talk about before we end the interview?

Thank you!