Fear and risk as drivers of the pursuit of individual sports:

an examination of the mountain biking experience

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Abstract

In this study, semi-structured interviews were performed with eight expert-level mountain bikers to explore the influence of both fear and risk on their experiences of mountain biking. Details of their experiences of physical education (PE) during adolescence were further examined. The aim of the study was to determine whether these childhood experiences may have influenced their decision to pursue this individual, adventure sport. Sports-disengagement during adolescence is a widespread phenomenon, resulting in adults whose lives are devoid of physical activity. This prompted the question of whether mountain biking might serve as an alternative to the more traditional team sports currently taught in PE classes as a way of stemming youth-sport disengagement. While the study yielded no definitive statements surrounding mountain biking as a potential remedy for youth-sport disengagement, the results indicated that problem-solving, achieving milestones, and friendships were core drivers of participants' engagement in mountain biking as a genre of physical activity. Moreover, the presence of both fear and risk in mountain biking enhanced all three of these elements for the participants, which encouraged their prolonged engagement with the sport. Finally, the participants could not recall any particularly negative memories of PE during adolescence that might have driven them to pursue an individual, less structured sporting pursuit. Further study is required.

Résumé

Dans le cadre de cette étude, des entretiens semi-structurés ont été menés auprès de huit experts en vélo de montagne (VTT) en vue d'analyser le rôle de la peur et de la notion de risque dans leur expérience de la pratique du sport. Leurs expériences personnelles relatives à leurs cours d'éducation physique pendant l'adolescence ont également été examinées. L'objectif de la présente étude était de déterminer si ces expériences vécues pendant l'enfance avaient pu influencer leur décision de pratiquer ce sport d'aventure individuel. Le désintérêt pour le sport à l'adolescence est un phénomène répandu, avec pour conséquence une vie adulte dépourvue d'activité physique. Ce constat a soulevé la question de la pertinence de remplacer les sports d'équipe traditionnels enseignés dans les cours d'éducation physique par le VTT comme moyen de lutter contre le désintérêt des jeunes pour le sport. Bien que les résultats de l'étude n'aient pas permis d'établir de manière définitive que le vélo de montagne pourrait servir de solution au désintérêt des jeunes pour le sport, ils révèlent que la résolution de problèmes, la réalisation d'étapes importantes et les amitiés figurent parmi les principaux facteurs qui poussent les participants à pratiquer le vélo de montagne en tant qu'activité physique. De plus, la peur et le risque inhérents au VTT ont contribué à renforcer ces trois éléments pour les participants, les incitant ainsi à s'engager à plus long terme dans ce sport. Enfin, les participants n'ont pas gardé de souvenirs particulièrement négatifs de leurs cours d'éducation physique à l'adolescence qui auraient pu les inciter à poursuivre une activité sportive plus individuelle et moins structurée. Il convient de pousser les recherches plus loin.

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Contribution of Authors

Robert Jeffrey (Jeff) Silas is the primary author of this thesis under the immediate supervision of Dr. Lee Schaefer and Dr. Jordan Koch. Jeff Silas is the principal investigator in the collection and analysis of the data.

Chapter 1 was written by Jeff Silas, with Dr. Lee Schaefer and Dr. Jordan Koch providing editorial suggestions.

Chapter 2 was written by Jeff Silas, with editorial input provided by Dr. Lee Schaefer.

Chapter 3 was written by Jeff Silas, with editorial reviews provided by Dr. Lee Shaefer and Dr. Jordan Koch. The study's design and methodology were reviewed during the colloquium. Committee members Dr. Lee Shaefer, Dr. Jordan Koch, and Dr. Jeff Caron offered suggestions on structure and design, and these were implemented by Jeff Silas.

Chapters 4 and 5 were written by Jeff Silas, with editorial reviews provided by Dr. Lee Shaefer and Dr. Jordan Koch.

Dr. Patricia Silas provided extensive editing of the thesis.

List of Acronyms

PE = Physical Education

EAS = Extreme Adventure Sports

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Figure 1: The process of determining the main themes emerging from the data

Figure 2: The main fear-related themes

Chapter 1: Introduction

Mountain Biking has been, and will forever be, the primary building block of my personal and professional life. I am a professional mountain biker. My expertise lies in teaching mountain biking, and in establishing camps that specialize in mountain biking for children. Being a professional in this field has given me insight into the experiences of thousands of young students as they develop the skills required to navigate this sport. Of those experiences, a large component revolves around identity formation, confidence-building, and social development. I have found that a child's experience of their social standing among their mountain-biking peers functions as a kind of social capital, accrued through their individual mountain-biking achievements. By extension, the social currency of mountain biking is most pronounced when an individual rider confronts his or her fears and overcomes various challenges that arise along their journey from novice to expert mountain-biker. I have come to attribute much of my own identity and self-confidence to this very process—the accumulation of accomplishments in mountain biking born of both skill and the risks I have taken on the bike.

My personal preoccupation with fear, and how fear can be exploited for gain, gave rise to questions about why overcoming fear feels so satisfying, how fear contributes to identity formation, self-esteem, and self-confidence, and how fear can act as an agent of catharsis and transformation. Sports studies scholars and members of the adventure sports community have long credited adventure sports such as mountain biking with promoting self-confidence, self-efficacy, and positive self-concept, and with creating a sense of community (Brymer, 2010; Brymer & Oades, 2009; Frühauf et al., 2017; Wheaton, 2004). Scholars have also credited adventure sports such as freeride skiing, snowboarding, surfing, and mountaineering with fostering individual autonomy and improved problem-solving abilities (Opper et al., 2014, p. 193). However, of

particular interest throughout this study is how a person's relationship with fear influences their psychosocial and developmental outcomes particularly within the world of mountain biking.

This thesis thus explored the relationship of fear and risk-taking to psychosocial and developmental outcomes among a small group of mountain bikers in the Canadian provinces of British Columbia and Québec. The study was guided by the following broad research question:

- How does a person's response to various fears and risks on a mountain-bike (e.g., jumps, drops, steep descents) contribute to identity formation, to friendships, and to transformative experiences both within and beyond the sport of mountain biking?

Scholarship on extreme and adventure sports has identified a person's relationships with both fear and risk in sport as key drivers of personal growth, character development, and humility (Brymer & Oades, 2009). Researchers have further argued that fear compels individuals to focus on the task at hand, to contemplate how they will prepare themselves to face a challenging task, and to summon the courage required to overcome difficult situations (Brymer, 2010; Brymer & Oades, 2009; Frühauf et al., 2017; Willig, 2008; Arijs et al., 2017). Additional scholarship on identity, belonging, and friendship in the field of extreme-adventure sports suggests that sports such as mountain biking are potentially fruitful venues for personal development and growth (Brymer & Oades, 2009; Brymer & Schweitzer, 2012; McCormack, 2017; Opper et al., 2014), thus further motivating the research contained within this thesis.

1.1 Thesis Layout

This thesis has been drafted in the style of a manuscript-based thesis and has been organized as follows. The thesis begins with an introductory chapter, followed in chapter 2 by a brief review of the literature in which this study is grounded. Next, chapter 3 stands as an unpublished draft of a prospective manuscript; it details the methodology used, the results obtained, and the subsequent data analysis performed. Finally, chapter 4 provides a short summary of the study and offers concluding remarks.

1.2 Researcher's Bio-Sketch

I am a professional mountain biker who specializes in teaching and coaching. I transferred the skills and experience I gained from the sport into establishing a mountain bike camp and school that hosts hundreds of children each summer by way of week-long mountain biking camps. The concept of the camp emerged during my early years of riding and racing, but it was inevitable because my passion has always been for teaching and sharing my excitement for the sport with others. I held my first mountain bike camp in 1996, and twenty-six years later the camp has hosted close to 5,000 children from Quebec, Ontario, the West Coast, various parts of the US, and even Europe. My work in mountain bike teaching is known for skills practice and development, as well as for the positive environment the camp offers to future riders who are trying to find their footing in the sport.

My fascination with fear and risk was born of the many fear-inducing experiences that I have encountered on the trail. I regularly faced challenging situations on the bike that tested my resolve and improved my tolerance for both fear and risk. The ability to overcome various challenges and grow accustomed to fear and risk within the sport of mountain-biking has fascinated me ever since. I further believe that overcoming challenges on the bike has helped me

to overcome many other challenges in my life and has improved my overall character. It is for this reason that I chose to carry out this work.

Chapter 2: Literature Review

This chapter outlines the main areas of literature that served as sources for this study. The first section explores the existing literature on mountain biking, touching on ride experiences, ride motivations, and understanding the world of mountain biking (Hagen & Boyes, 2016; Palmer, 2006; Roberts et al., 2018; Taylor, 2010). Section two explores the literature that exists in lifestyle sports, the history of extreme sports as counter-culture activities, and the subsequent societal shift of sporting culture from the gymnasium to the great outdoors (Thompson Coon et al., 2011; Houlihan & Malcolm, 2015; Wheaton, 2004). Next, section three explores the literature on extreme sports, with a particular focus on the relationship between fear and identity, sense of belonging, and commitment (Arijs, 2017; Brymer, 2010; Frühauf et al., 2017; Laurendeau, 2011; Willig, 2008). Finally, section four explores the literature on youth disengagement in sport. The intent here was to consider the possibility that some participants may have pursued individual sports, such as mountain biking, as a reaction to poor or unfulfilling experiences in team sports or other more structured sporting activities (Bernstein et al., 2011; Carlson, 1995; El-Sherif, 2014; Grasten et al., 2014; Olafson, 2002; Pope & O'Sullivan, 2003; Ruiz-Perez et al., 2018).

2.1 Mountain Biking

The contemporary sport of mountain biking emerged primarily in Marin County, California in the 1970s. Since then, the sport has grown into a worldwide phenomenon with dedicated destinations specific to mountain biking in almost every country around the globe. Mountain biking has also inspired spinoff activities with televised competitions, most notably resulting in the sport's Olympic debut in 1996 (Savre et al., 2010). It is a sport that combines fitness, social interaction, physical challenge, and transformative experiences, and has become accessible and inclusive to new riders and across almost all age ranges (Creyer et al., 2003; Hagen & Boyes,

2016; Roberts et al., 2018). Mountain biking was formerly known as an extreme sport, but now sits among a larger body of more mainstream, recreational, and outdoor sports. The evolution of mountain biking has been accompanied by changes in terrain, improved safety practices, and the involvement of cities and municipalities in the sport (Taylor, 2010). In short, it has gone from being a niche sport plagued with restrictions, to a legitimate, regulated sport with dedicated trails (Siderelis et al., 2010).

Research in mountain biking is limited but has nevertheless addressed several areas of the sport, including: specializations in bike technology (Hall et al., 2019), mountain bike training (Rauter, 2018), mountain biking and mental health (Clough, 2016; Roberts et al., 2018), mountain biking injuries (Kirkwood et al., 2019), and overall trends in the sport (Roberts et al., 2018; Taylor, 2010). While the scholarly literature at the heart of this thesis focuses on mountain biking, the broader literature on prominent themes such as identity formation, confidence building, and sense of belonging that were common across other comparable sports containing elements of fear and risk was also considered (Brymer & Oades, 2009; Frühauf et al., 2017). Indeed, at the root of all extreme and adventure sports is the presence of both fear and risk. When appropriately harnessed, fear and risk have the potential to generate positive effects for individual athletes such as improvements in self-esteem, emotion regulation, self-concept, and sense of belonging (Hagen & Boyes, 2016; Palmer, 2006; Robert et al., 2018). It is therefore expected that the literature relating to those areas is relevant here.

2.2 The Birth of Lifestyle Sports

Lifestyle sports, previously known as alternative sports, are typically sports and activities that combine aspects of outdoor adventure. These sports tend to be individual in nature and are usually accompanied by some degree of danger that is compounded by situational variables such

as rain, wind, and temperature. In the past, lifestyle sports and extreme sports were grouped together, although actual extreme sports involve much higher levels of risk (BASE jumping or wingsuit flying, for example). Lifestyle sports are still considered members of the extreme sports family, but they rarely have the potential to cause death. Examples of lifestyle sports include surfing, kayaking, rock climbing, kitesurfing, snowboarding, and mountain biking.

Lifestyle sports, adventure sports, and extreme sports share many similar characteristics—e.g., high speeds, vertiginous heights, long distances—and those involved in such sports tend to use similar vernaculars. In addition, all three sporting families tend to be associated with passionate participants (Kajbafnezhad et al., 2011) who routinely display their sporting identities on t-shirts, hats, and bumper stickers (Huybers-Withers & Livingston, 2010). While the popularity of lifestyle sports has grown considerably since the 1990s (Wheaton, 2004), researchers have also witnessed a corresponding shift in the public's interpretation of these sports as 'less dangerous' alternatives to their extreme sports counterparts. In this way, these alternative sports have become legitimized (Houlihan & Malcolm, 2015; Wheaton, 2004) despite the presence of risk.

2.3 Extreme Sports, Fear, and Risk

Studies reporting on the most extreme sports in the world almost always highlight the presence of both fear and risk as distinctive elements within these sporting activities. Examples of extreme sports include BASE jumping, free climbing, wingsuit flying, and white-water kayaking, among others. Many of these studies also highlight how the presence of fear and risk within these sports contribute to an athlete's identity formation and sense of belonging through transformational experiences (Frühauf et al., 2017; Hagen & Bowes, 2016; Willig, 2008). Special attention has been paid to the notions of escapism, thrill-seeking, and self-discovery in extreme sport literature (Brymer, 2010; Frühauf et al., 2017; Willig, 2008).

As is the case for other extreme sports, the presence of fear, risk, and general danger are central to the sport and subculture of mountain biking. Participants—regardless of age, gender, or skill level—collectively acknowledge the importance of fear and the adrenaline rush of riding as distinguishing features of the sport and as fundamental drivers of their prolonged engagement with it (Hagen & Boyes, 2016; Roberts et al., 2018; Taylor, 2010). Mountain bikers and other extreme sports athletes pride themselves on learning how to mitigate both fear and risk through a mixture of experience and calculation, rather than responding to potentially life-threatening challenges with imprudence (Hagen & Boyes, 2016). Furthermore, in moments of great risk, extreme sports athletes also report experiencing increased levels of focus and mental clarity, which leaves lasting impressions that can be transformative (Brymer & Oades, 2009; Chein et al., 2011; Timken & MacNamee, 2012).

2.4 Sport Disengagement in Adolescence

The final segment of this literature review pertains to sport disengagement in youth. The motivation behind this part of the literature review was to better understand whether a person's negative experiences in either physical education (PE) or in team sports may have compelled them to turn to individual sports. Sport disengagement during adolescence is present in as much as 35% of today's youth in North America, the primary causes of which are perceived inadequacies of physical competence, social acceptance, coach conflicts, and lack of sports diversity (Fraser-Thomas et al., 2008). The downturn in physical participation has become apparent over the past three to four decades as trends in both physical education and organized sport (via sport specialization) has focused on the production of performance results rather than enjoyment (Timken & MacNamee, 2012).

This tendency to prioritize an athlete's performance and results over enjoyment took hold in the latter part of the 20th century when physical education transitioned to more performance-based learning that favoured the physically fit and punished the unfit (Carlson, 1995; Olafson, 2002). Students who struggled with fitness and physical competency tended to have negative takeaways from the traditional formula of physical education in schools, undermining enthusiasm among those with inferior performances (El-Sherif, 2014). The scholarship on this topic points to precipitous declines in reduced athletic self-concept because of these complex and sometimes traumatic episodes in the gymnasium (Marsh et al., 1997; Wichstrøm et al., 2013). Several studies have reported students feeling alienated from sport and physical activity because of judgements based on their skill level, coordination, and body type (Bernstein et al., 2011; Carlson, 1995; Olafson, 2002; Pope & O'Sullivan, 2003). These early experiences have also been shown to be long-lasting among youth, resulting in serious consequences for a person's lifetime relationship with sport and physical activity (Anderssen et al., 2005; El-Sherif, 2014; Grasten et al., 2014; Olafson, 2002; Phillips & Bernstein, 2012; Ruiz-Perez et al., 2018).

2.5 Chapter Summary

This chapter reviewed literature in the fields of mountain biking, lifestyle sports, extreme sports, and youth disengagement from sport. The existing literature regarding the influence of fear and risk on psychosocial development within the sport of mountain biking is limited. However, research pertaining to other comparable lifestyle sports provided a relevant source of information. Research on extreme sports, which is almost purely centered on fear and risk, also provided insight into risk management, participant psychologies, motivations for pursuing these dangerous activities, and the transformational nature of such sports. Finally, the existing literature on youth-

sport disengagement illustrates the potentially high price of a person's negative experiences in sport and physical education during adolescence.

Chapter 3: Manuscript

Introduction

Perceptions of Extreme Adventure Sports (EAS) such as mountain biking have not always been positive. Voluntarily exposing oneself to potentially life-threatening injury and unnecessary risks has been considered by many commentators as reckless and even pathological in nature (Lyng, 1990; Sandseter, 2009). However, occasional exposure to both fear and risk has also been shown to yield many potential benefits for adrenaline-seeking sport enthusiasts, including opportunities for personal growth, increased self-esteem, humility, improved emotion regulation and overall mental health, and the development of courage in the face of adversity (Brymer & Oades, 2009; Clough et al., 2016; Roberts, et al., 2018). For EAS athletes, of course, the presence of both fear and risk is considered an integral part of their sporting experience (Frühauf et al., 2017). Striking the correct balance between these elements is a personal journey that compels EAS athletes to contemplate their sporting objectives against their athletic and psychological limitations (Brymer & Schweitzer, 2012), as well as their capacity to risk both life and limb in pursuit of sport.

The sport of mountain biking has evolved considerably since its emergence in the 1970s; however, the presence of both fear and risk remains central to the sport (Creyer et al., 2003). Mountain biking is considered part of the broader family of lifestyle sports, i.e., sports that encompass aspects of outdoor adventure, are individual in nature, and tend to be accompanied by varying levels of danger (Wheaton, 2004). While these sports may have emerged from the family of EAS—sports that present extremely high levels of risk—there are comparatively few studies that examine the interplay of both fear and risk in lifestyle sports (Brymer & Oades, 2009; Brymer & Schweitzer, 2012; Arijs et al., 2017). Much of the EAS literature has emphasized how the benefits of conquering fear through sport cross over into everyday life (Brymer & Oades, 2009;

Frühauf et al., 2017; Kunwar, 2021; Willig, 2008). For example, Brymer & Schweitzer (2012) argued that overcoming fear in EAS has a positive effect on a person's sense of autonomy and can also improve his or her ability to handle difficult situations. Willig (2008) further argued that these sorts of personal and psychosocial benefits may not have occurred otherwise.

Most riders—regardless of age, gender, or skill level—acknowledge that fear and risk are vital components of their mountain biking experience (Roberts et al., 2018; Taylor, 2010). Mountain bikers learn to manage this risk through a mixture of experience and careful calculation, rather than responding to life threatening scenarios with imprudence (Hagen & Boyes, 2016). In EAS, fear has been shown to help narrow focus, to increase awareness of one's surroundings, and to help achieve calmness in the face of danger (Arijs et al., 2017). I aim to have a deeper understanding of the influence of both fear and risk in the world of mountain biking.

Methods

This study was performed within a constructivist paradigm (Guba & Lincoln, 1994), which supports the epistemological position that knowledge is co-created (Sparkes & Smith, 2014). Much of the research and data collection for EAS studies has historically embraced a constructivist paradigm and relied upon the use of semi-structured interviews (Frühauf et al., 2017; Willig, 2008)—an interview style that allows participants the freedom to expand on any given subject or line of questioning, thus promoting participant-led discussion and resulting in rich qualitative data (Smith & Sparkes, 2016). My research consists of semi-structured interviews with a total of eight highly experienced mountain bikers from the East and West coasts of Canada. Each participant met the following selection criteria: 18+ years of age; avid mountain biker; possesses significant lived experience of mountain biking. Participants were recruited through a purposeful sampling strategy (Etikan et al., 2016) that extended outward from the principal researcher's cycling

network. All participants for this study either worked in the cycling industry, competed in mountain-biking competitions, and/or were currently coaching mountain biking to supplement their income.

Participant Profiles

Yann is 32 years old and has over 17 years of mountain-biking experience. He is an expert mountain biker who has occupied various roles throughout the Quebec bike industry. He also has a competitive racing background but presently rides for leisure and pleasure. Yann currently lives in the Eastern Townships of Quebec, Canada.

Jerry is 31 years old and has over 19 years of mountain-biking experience. Jerry is a talented rider who has a long history of mountain bike coaching. He presently specializes in teaching bike-repair classes to future bike mechanics and other cycling enthusiasts. He currently lives in the Eastern Townships of Quebec, Canada.

Alex is 33 years old and has over 21 years of mountain-biking experience. Alex is a sales representative for a prominent company within the bike industry. He has coached mountain biking and worked in bike shops across Canada for over two decades. He presently lives in Squamish, British Columbia.

Vaea is 30 years old and has over 15 years of competitive mountain-biking experience. Vaea is presently a professional mountain biker who earns her living competing in large-scale events. She lives in the interior of British Columbia.

Andrew is 35 years old and has over 25 years of competitive mountain-biking experience. He is a lifelong mountain biker with extensive experience working as a mechanic in bike shops. He has also competed in many mountain-biking races and presently lives in Montreal, Quebec.

Andy is 33 years old and has over 18 years of mountain-biking experience. He is currently a professional photographer who shoots at and reports on some of the most significant mountain-biking events in the world. He lives in the Eastern Townships of Quebec, Canada.

Dagny is 35 years old and has over seven years of mountain-biking experience. Dagny is currently working as a mountain bike instructor and outdoor guide in North Vancouver, BC.

Phil is 43 years old and has over 28 years of mountain-biking experience. He is a master mountain bike mechanic and currently earns his living repairing bikes at a mountain-bike-specific service center in Montreal, Quebec.

Data Collection

The original plan for data collection was to perform ride-along interviews with participants on our mountain bikes to elicit participants' most meaningful stories and experiences. The idea was that each ride-along interview would incorporate stops at key local mountain bike destinations selected by the interviewee in the hopes of encouraging greater reflexivity and discussion about prominent themes from their past such as fear, flow, friendships, personal milestones, and other impactful experiences on the bike. Unfortunately, the timing of data collection for this study coincided with the Covid-19 pandemic and the plan thus pivoted to conducting interviews through video conferencing software (e.g., Microsoft Teams). On the plus side, this methodological transition enabled reaching out to a more diverse group of riders from various parts of Canada.

The interview guide (Appendix B) was developed through careful reflection and deliberation about the primary researcher's extensive personal history as a mountain-biker, as well as by identifying various gaps in the scholarly literature on lifestyle sports, most notably the dearth of research dedicated to exploring the interactions between fear, risk-taking, and psychosocial

development among mountain bikers. Each interview was approximately 60 to 90 minutes in duration; voice-recorded on Microsoft Teams; and transcribed by the primary researcher. In some cases, follow-up questions were also asked/answered over email to help clarify certain arguments and to further comment on emergent themes.

Data Analysis

The data analysis for this study was performed in two phases: in phase #1 I began by combing through each transcript and highlighting any points that stood out as either significant or unusual. As the primary codes began to emerge, I next began to organize the data into a table. This table was comprised of eight rows—one for each participant—and 23 columns that represented a total of 23 primary codes. Examples of these primary codes include: fun, challenge, identity, friendships/social, fear, identity, milestones, trust, and comfort zone. This table allowed me to see how populated each of my primary codes was. From this, I was able to decide which of the less-populated columns or primary codes could be combined with other more highly-populated codes—if two primary codes were related to each other then I had the more highly-populated primary code absorb the less-populated one—I then renamed the code if necessary. However, if a little-populated primary code was unrelated to any other primary code, then it was eliminated. Combining and eliminating the data in this way allowed me to identify eight prominent themes (Braun et al., 2016; Guest et al., 2012; Tuckett, 2005) that I labeled as: physical education, problem-solving, flow, identity/belonging, friendships/social, risk and fear, milestones/discovery, and longevity of association with the sport. I was particularly interested in how riders' experience of fear and risk affected other aspects of mountain biking, and so I streamlined the table into four main themes that highlighted this aspect of their interviews. These four themes are: fear and risk, friendships,

problem-solving, and milestones. Figure #1 below illustrates the first phase of my analytic process. Phase #2 is illustrated in figure #2, which further displays how fear and risk only emerged spontaneously in discussions about themes such as friendships, problem-solving, and milestones, rather than through direct probes into this specific topic.

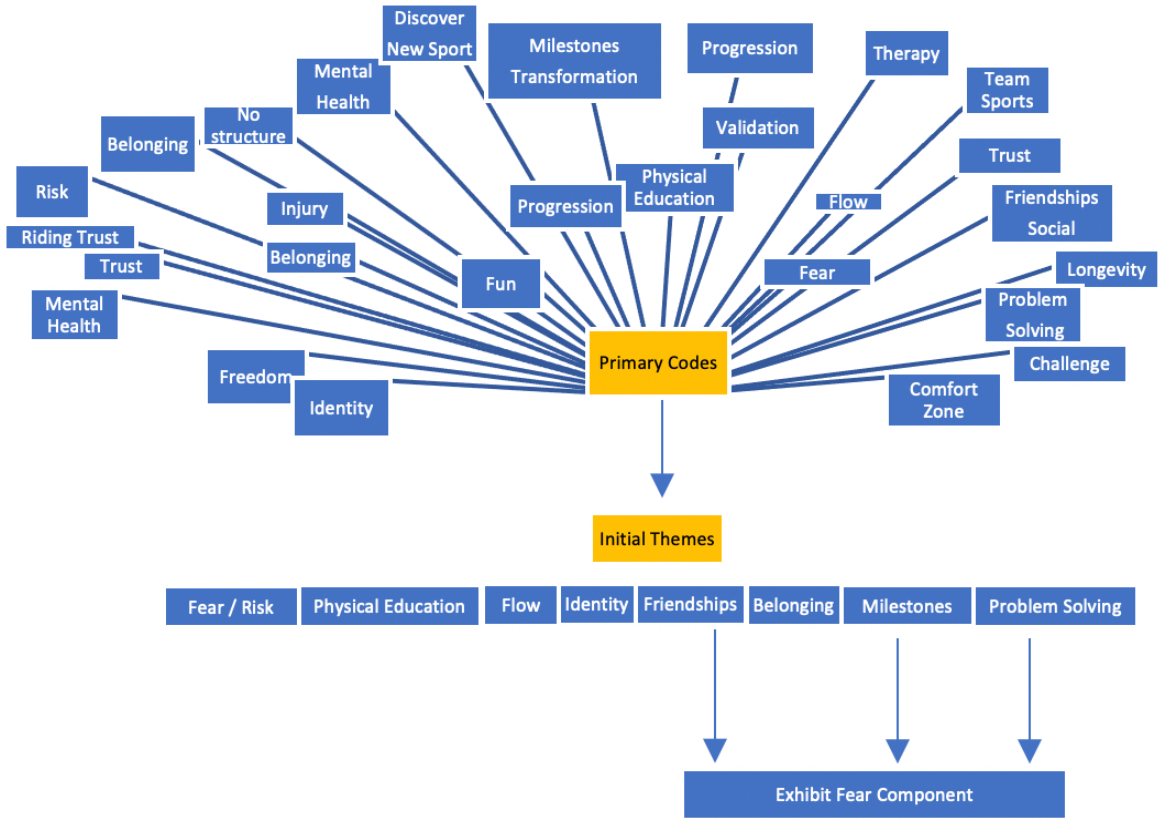

Figure 1: Data was organized according to 23 primary codes, yielding 8 main themes. Beyond the main fear and risk theme, three themes demonstrated a fear component: friendships, problem-solving, and milestones.

Figure 2: The themes of friendships, problem-solving, and milestones have been organized under the umbrella theme of fear and risk.

Results and Discussion

The initial findings from the data pertained to a wide range of themes including flow (Csikszentmihalyi, 1990), physical education, longevity, and others. The themes that were of particular interest were fear-risk, problem-solving, friendships, and milestones. The latter three themes are notable because they all exhibited an element of fear, and thus can be classified under the umbrella of the fear-risk theme. The spirit of these themes is captured in the Frühauf et al. study (2017) as being vital to the EAS experience, as well as in Willig's (2008) study, where the friendships theme—labeled by the authors as "other people"—appears as fundamental. Studies

performed by Brymer and Oades (2009) and Roberts, Jones, and Brooks (2018) also found that friendships was a meaningful component of the EAS experience. Participants of the present study further elaborated on the central themes of fear, risk, and psychosocial development as discussed in the following section.

Theme 1: Fear, not Risk

Responses to questions relating to fear and risk indicated that fear and risk were experienced by participants as two distinct yet interrelated phenomena: whereas fear was mainly conceived of as an individual experience, risk was conceived of as the calculation of potential harm that a rider might incur should they attempt a certain maneuver on the bike. The subject of fear yielded a great deal of discussion, including points about positive fear versus negative fear. All the riders elaborated on the various shades of fear they encountered on the bike. However, participants did not offer the same level of detail when discussing the risk or possible consequences of certain riding decisions. This observation was very revealing: in their responses, participants simply avoided thinking through the consequences of their actions and, instead, focused on their objectives. Frühauf et al. (2017) made a similar observation in their discussions about positive fear versus negative fear. Whereas positive fear was seen as a tool for improving a rider's focus and enhancing their decision-making on the bike, negative fear was considered debilitating to a rider's confidence and an impediment to their progress. Jerry explained:

> If I'm considering taking the risk, it's because I believe I can pull it off. I'm usually calculated. And most of the time, it's truly a matter of harnessing my fear (Jerry, personal communication, Jan. 28, 2022).

Jerry's account supports the observations made in other EAS literature that riders view their experiences of fear as productive rather than as inhibiting (Frühauf et al., 2017). Other riders identified several occasions on the bike when fear was experienced as background noise to the task-at-hand, even in dangerous conditions. None of the riders suggested that they wished to avoid fear altogether. Instead, as in Brymer and Schweitzer's study (2012), most riders enjoyed acute focus and awareness when navigating risky situations on the bike such as jumps, drops, or even very steep descents. For example, Phil argued that fixating on fear rather than on performance ran counter to accomplishing his goals on the bike:

> If I'm following you and I'm having a lot of fun like, and we're like, wide open through the trees and whatever. Umm, the amount of fun that I'm having is definitely tempering the risk assessment. It's like, "you could get hurt, buddy, but look how much fun you're having!" (Phil, personal communication, Feb, 21, 2022).

Indeed, most riders understood that focusing too much on the risks associated with mountain biking undermined both their enjoyment of the sport and their likelihood of success. Dagny explained:

> I, of course, consider the risk factors if things go wrong but I try to focus on what is needed to achieve the goal instead. I listen to my gut feelings: if I am feeling sketchy or if I am riding well this day. Usually, the days where I end up riding the new features are days where I am not planning on doing it (Dagny, personal communication, Feb. 14, 2022).

As Dagny noted, tackling a challenge quickly on the bike without over-thinking it has helped her to overcome certain fears and anxieties in the past. The riders were unanimous in that, above all

else, progressing in the sport of mountain biking required mental resilience in the face of fear, and the ability to silence the more precautious voices in one's head. As one participant from Willig's (2008) study succinctly explained: "It's a challenge to mentally make yourself jump off a bridge" (p. 695). The riders I interviewed explained that, while they grew more confident encountering fear with both age and experience on the bike, they also grew more risk averse:

> I feel my risk tolerance has varied over the years, mostly as I grow older and more experienced. I tend to be more risk averse. However, my skillset has grown so my fear threshold has decreased. In my mind, fear and risk are two lines that intersect at a certain point. This is like a balance point and, if you get off it, things are either boring, or on the opposite end: terrifying (Alex, personal communication Feb. 1, 2022).

Riders are constantly gauging the potential consequences associated with attempting various challenges on the bike. For example, a high drop with a very large landing is considered a low-risk maneuver because less precision is required for the landing. In contrast, a small jump in a steep trail is considered high-risk because the landing is small and thus requires greater precision. All these consequences are considered, but riders try not to overthink them in the interest of accomplishing the challenge, just as Dagny explained above. A colloquial term that emerged within the mountain biking subculture is *courage atrophy*: a phenomenon that occurs when riders stop pushing their limits out of fear and apprehension. Because they stop attempting challenges their skills deteriorate, which is common as mountain bikers age. One participant stated: "Yeah, I'll go hit stuff that I know is scary because I know it pushes me, and it's good to push. It's good to keep yourself in check" (Andy, personal communication, Jan. 31, 2022). Andy was referencing

deliberately confronting situations that evoke fear as a mechanism not only to push one's limits, but also to remain comfortable with feeling scared.

According to Willig (2008), focusing on the task at hand, even if just for a few seconds, can be the difference between success and injury. Yann's account below supports Willig (2008) who coined the term "moment of truth" (p. 695) to describe the short burst of courage needed to execute a risky maneuver on the bike in the face of fear:

> The thing that mountain biking brought me, into my day-to-day life, is to be able to challenge myself in different ways and then, like, control my fear. 'Cause you know when you're at the top of this super steep gnarly shoot and you're scared. But you know what you need to do in order to not crash (Yann, personal communication, Jan. 26, 2022).

In a sense, riders see little point in focusing on negative outcomes—rather, it is much more a question of managing the physiological and psychological responses to "overwhelming fear" that enables riders to succeed in the sport (Brymer & Oades, 2009, p.116).

Jerry expressed a similar sentiment when he encountered some of the largest jumps in Canada, i.e., jumps that require a speed of at least 40 kilometers per hour to land successfully (and to avoid serious injury). Jerry explained his "all or nothing" approach:

> I remember telling myself if you touch your brakes, you're dead. One second later, you're in the air and you see the landing and you're like, oh, it's actually not that bad. It was like OK, no brakes, no brakes, no brakes, no brakes, no brakes, no brakes, it's amazing (Jerry, personal communication, Jan. 28, 2022).

Jerry's experience is noteworthy as large jumps cannot be attempted partially. A half-way attempt would likely result in an overloaded suspension event and a major crash. This aligns with other EAS research where respondents appeared to know the extent of the risk involved but chose to focus on planning and execution, rather than ruminate on the potential consequences of a failed attempt. It is a "necessary part of the experience" (Willig, 2008, p.700).

Theme 2: Fear and Problem-Solving

Riders described using various strategies to help reduce risk and overcome terrain challenges: a problem-solving process that begins with preparatory decisions like line-choice, body position, entry speed, as well as other techniques to simplify the tasks and maximize the likelihood of success. Problem-solving is often simply a question of deciding which elements really matter, focusing on those, and eliminating the rest from your consciousness. These problem-solving methods as described by our participants were comparable to, but not identical to, the risk-management strategies found in other EAS research (Arijs et al., 2017; Brymer & Oades, 2009; Frühauf et al., 2017; Willig, 2008). As both Yann and Andrew relayed:

> Being an experienced rider means you've come from a long experience of risk management. You can take that knowledge and apply it to the current situation knowing exactly what to do right to minimize the risk (Yann, personal communication Jan. 26, 202
>
> I gauge the risk through other riders doing it, you know […] if I've never seen anyone hit this, I'm doing it in my mind like as though first one ever. In a sense, without a frame of reference to know how fast (Andrew, personal communication, Jan 28, 2022).

In the above excerpts both Yann and Andrew were describing the various strategies they have developed to make informed decisions. A common strategy and normal bike-park etiquette is to ride new trails slowly, or to follow someone who knows the trail, prior to trying to attempt the trail at full speed. Riders also use visualization to help them navigate trails faster while connecting as many features together as possible (Siderelis et al., 2010). Dagny explained:

> I think for me fear [has] a lot to do with the unknown. I just don't know what the outcome is or whether I can do it. I think I tend to analyze risk more. It comes down to analyzing and solving a problem (Dagny, personal communication, Feb. 14, 2022).

Through calculation, risk management, visualization, and even self-deception, participants like Dagny navigate danger and overcome challenges on the bike (Brymer, 2010; Willig, 2008). Vaea further relayed how this works in terms of bolstering her own confidence:

> If you look at something and it creates fear… It already answers the fact that you know you're capable of doing it [...] now you have to figure out how to do it. So long story short […] if I'm scared of something, it's because I know inside of me, I'm capable of doing it but it doesn't mean it's going to be easy […] you know 'cause I've been there before but [it] doesn't mean I'm not capable. I am capable of it (Vaea, personal communication, Feb. 9, 2022).

Vaea uses fear to push herself; she identifies the sensation—that she is feeling fear—and she uses this knowledge to temper how she responds to it. The result of such strategies is that she and her peers move through these challenges solving problems along the way, rather than avoiding them.

In contrast, Andy explained that conquering fear on the bike came second to his desire to solve a problem. However, he further speculated that the presence of fear coupled with a difficult problem on the trail was the most seductive formula for advanced riders like himself:

> Yeah, I mean my first experience with the full fear thing was riding the original […] [secret] trail called Hairway to Steven. And I remember being not even scared, but, I was beyond that. I was frustrated with it. I couldn't figure it out […] I was dumbfounded, and I still remember those feelings. I know my abilities; I won't throw myself into situations that I know I can't actually handle (Andy, personal communication, Jan. 31, 2022).

The trail mentioned above by Andy, *Hairway to Steven*, is an unauthorized trail that does not respect trail building standards. As a result, such trails are often very steep with little or no room for error. This type of terrain is considered exciting and tends to attract ambitious riders looking for new challenges. It also forces riders to reflect on their abilities, or motivates them to improve their abilities:

> Those who are more motivated by risk (in particular, younger, downhill riders) are also more likely to enjoy this aspect [risk-taking] of the sport; and as such are also more inclined to mitigate against these risks by "spending more time practicing the required skills to deal with those situations" (Roberts et al., 2018, p.16).

Roberts and colleagues (2018) further stated: "hazards are usually mediated by the participant through a process of building competence and skill through experience as opposed to taking risks for risk's sake" (p. 2). This is where I can see the benefit of the above-mentioned problem-solving

tools. If, for example, a rider wants to conquer a high drop, he or she can master lower drops that have similar characteristics before attempting something with higher consequences.

Theme 3: Fear, Friendships, and Trust

Participants' responses indicated that many of their most intense and enduring friendships were forged during moments of mutual fear. In much of the EAS literature, friendships in extreme sports are compared to those that arise in team sports. In these contexts, friendships have been shown to arise by participants having to rely on each other, and to the emotional support given and received through challenging moments (Frühauf et al., 2017; Willig, 2008). As Dagny explained, these friendships have a significant impact on development and success in mountain biking:

> Outside pressure or coaching support from trusted friends, riders, partners and coaches also have a huge impact to bridge the gap between what I think is within my wheelhouse and what is actually within my wheelhouse. Usually, I reach the biggest milestones when I ride with other people who give me the right amount of encouragement to try a new feature or to finally tackle that feature I have been thinking about for a while […] the key is to have someone you trust fully and that knows you and your riding ability (Dagny, personal communication, Feb. 14, 2022).

Dagny's experience demonstrates how accompanying riders can play an important role in supporting, advising, and leading less-experienced riders down the trail. Riding behind someone you trust means that you trust their advice and judgement—that you trust the speed and the line of the person who is leading you. This underlines an important distinction between mountain biking and many other sports that involve trust: when you follow someone on a trail, you are not seeing

the trail, you are seeing that person in front of you—it is his or her actions that inform you of what is coming. It's a high-risk game of follow-the-leader. Alex elaborated:

> Riding a trail like A-line at blistering speed right behind someone you trust, the experience is surreal as it's happening and both people experience it in their own way and both come out with fear, trust, and friendship. It's happened to me! […] I mean, like, you and I haven't ridden together in years, but I know that I have a perfect level of trust. I can follow you and I know you're not going to do anything stupid (Alex, personal communication, Feb. 1, 2022).

Alex was referring to what the primary investigator terms "telegraph riding", which occurs when riders following one another involuntarily mirror the leaders' actions and line-choices. If the leader makes a mistake, the riders behind tend to make the same mistake. It is common for riders to discuss riding style because it is what you see when you are following someone. If a person's riding style triggers a nervous reaction, or surprises you, you are not likely to trust or follow that person in the future. Conversely, if someone's style reassures you, or inspires you, you are likely to follow and emulate them.

Riders who collectively experience fear ahead of a risky challenge like a big jump, high drop, or steep descent seem to create connections with other riders that remain long after the ride is over (Moularde & Weaver, 2016). Deep friendships can result as a product of having to face challenges together, whether being scared together at the same time, or at different times. (Malterud, et al., 2021; Taylor, 2010). Riders who come face-to-face with a difficult and frightening trail, jump, drop, or other scenario, can have greater affect toward the peers who accompanied them through those experiences. As Willig (2008) explains, "strong bonds and strong

feelings of camaraderie [are] generated by being together during moments of great vulnerability" (p. 694). This phenomenon has been observed in similar studies of EAS where it was found that personal bonds were formed through having to face life-threatening circumstances alongside other adventure seekers (Frühauf et. al., 2017). Yann explained how trust in other riders has enabled him to conquer his own fears and become a better rider himself:

> I love riding with people who are faster, hit bigger jumps and bigger features than I because I can keep up with them. And if I can trust them, if there is a certain level of trust, then I'm going to hit the feature they're hitting that I don't normally hit (Yann, personal communication, Jan. 26, 2022).

Participants noted that the emotional and technical support they received in the field helped to build a trusting and tightknit community among riders (Brymer & Oades, 2009). Moreover, the riders further believed that friendships were enhanced by having to trust that other riders would support them across a range of scenarios on the hill: from encouraging a rider to perform a technique or conquer a challenge; to applauding a rider's decision to step down from a challenge if they felt uncomfortable; and finally to entrusting that your community would be there to help treat and care for you in the event of a crash or serious injury on the hill.

Theme 4: Fear and Milestones

Milestones punctuate every mountain biker's career: "it is the personal challenge and goal attainment that characterizes the experience" (Hagen & Boyes, 2016, p.92). Milestones in the sport of mountain biking are often associated with overcoming a certain degree of fear and stress, which are followed by feelings of joy, relief, and catharsis (Arijs et al., 2017; Brymer & Schweitzer,

2012). Participants highlighted overcoming fear as a significant feature of their milestones. Andrew and Dagny elaborated below:

> I hit this sketchy drop that someone had built in the woods that had like a really short run out into like a bit of a ravine. [I told myself] like I can't, I can't leave here without doing it. It's like, I can't walk away 'cause I know I can do it. […] I went back up again and I just, and I did it, you know. It felt so good to say, I conquered that (Andrew, personal communication, Jan 28, 2022).

> I think the relationship between fear and the happiness/adrenaline rush that you experience when you reach certain milestones is pretty equal input/output. The more you have thought about and worked on doing something the more satisfying it is to achieve it. A little bit of fear is a good thing. It helps me prepare my body and brain to be as alert as possible to tackle whatever I am about to ride. However, too much fear is paralyzing and will result in sketchy riding and under-performing. So, there is always that balance to navigate and that can vary from day to day depending on what else is going on in our lives (Dagny, personal communication, Feb. 14, 2022).

Seven of our eight participants responded that their most significant milestones were tied to specific moments when they overcame fear, accomplishing a large feature such as a jump or a steep descent. Those accounts of specific terrain milestones in mountain biking involved fear upon entering the situation, followed by feelings of elation (or disappointment) when it was over. Yann explained:

> To reach a new milestone in mountain biking, it means pushing your limit a little bit more, putting you out of your comfort zone. It increases the risk, but when you

> succeed, the feeling is awesome! High risk, high reward, but high risk! (Yann, personal communication, Jan. 26, 2022).

The positive emotions felt after accomplishing a large, scary feature have been remarked on in other EAS studies. One respondent in Willig's (2008) study compared these sensations to using cocaine. Milestones like these and the transformation that accompanies them are thus often grounded in fear. Fear drives focus and awareness and is used ultimately to achieve greatness (Goud, 2005).

> There's never been a bigger moment than when you made me do Hot-Wheels [in Bromont]. […] the first time I saw this feature I thought "never" […] I was so scared and nervous the first time I did it, and I absolutely messed up the line and nose-dived out of it. However, I came out of it fine and that made me realize the risk associated with it wasn't too bad and that I could probably only do better the next time I tried it. I experienced a huge relief and just wanted to run back up to repeat it… I must have run up about ten [more] times (Dagny, personal communication, Feb. 14, 2022).

Hot-Wheels is a wooden bridge that dives and then rises into a jump that is five feet from the ground. The height of the rider's actual jump varies with distance and slope of the landing. The faster the rider goes, the higher the drop. The feature is not overly advanced, but the approach makes it intimidating. The confidence boost that Dagny experienced subsequent to having conquered *Hot-Wheels* was all the greater because of the self-doubt she had built-up over months of avoiding the feature. She had looked at the drop many times prior to that moment, but never believed she could accomplish it. When she finally did, she wanted to feel the sensation again and

again. A BASE jumper (building, antenna, span, or earth) in the 2009 Brymer and Oades study explained it this way:

> I really felt like I was out of my depth, I was seriously challenged and a couple of times I did think "I am going to die" but I didn't. At the end of the day I had an epiphany because I did not die but I really enjoyed it […] My life has been radically altered by that choice by that day (Brymer & Oades, 2009, p.118).

Participants' experiences of milestones echoed that last sentiment, as well as the following: "during such moments, there appears to be no mental space available for anything other than the task at hand, and as a result, one's world is reduced to the immediate present" (Willig, 2008, p.697). Phil described his experience:

> The first time I rode […] a trail called *Ride Don't Slide*. At the time it was a 'secret' trail, meaning it existed, but was not on the Whistler Blackcomb official trail map, and was not sanctioned by the mountain resort. It was, and still is, one of the longest and steepest trails in the world. I had never experienced that much sustained steepness and exposure before, and the risk and danger were augmented by the fact that I were well off the grid, and out of the bounds of the emergency patrol. There was very little time to think as the trail demanded that a rider stay 'in the zone' for most of the time. It was a life-changing experience, because every challenge or obstacle I faced afterwards, on the bike or off, was balanced and measured against it. […] Everything looked different after *Ride Don't Slide* (Phil, personal communication, Feb, 21, 2022).

Not everyone is accustomed to deliberately subjecting themselves to moments of genuine fear. However, by immersing himself in fear on *Ride Don't Slide*, Phil brought about a highly meaningful personal transformation—initially on the bike, but ultimately into his everyday experience of life. Thus, exploiting fear in such a way—working through a situation despite the paralysis of fear—has the potential of leading to powerful and meaningful moments that can be impactful far beyond the bike, transferring to day-to-day life.

Conclusion

The aim of this study was to examine the relationship between fear and mountain biking. An analysis of semi-structured interviews conducted with eight expert-level riders indicated that fear is inextricably intertwined with certain fundamental aspects of mountain biking: friendships, problem-solving, and life-changing milestones. This aligns with the idea that fear is deeply interwoven, in complicated ways, with all EAS (Brymer & Oades, 2009; Brymer & Schweitzer, 2012). Specifically, the results of this study yielded four main fear-related themes as key drivers of participation and psychosocial development among experienced riders: the three mentioned above (friendships, problem-solving, and milestones), and a main theme of fear and risk.

EAS researchers have underscored certain benefits arising from fear and risk in extreme sports, and noted that they can yield valuable, life-changing experiences (Brymer & Oades, 2009; Brymer & Schweitzer, 2012; Willig, 2008). Brymer and Oades (2009) and Roberts, Jones, and Brooks (2018) found that transformational experiences resulting from milestones achieved in sport tended to spill over into regular life. The participants in this study echoed this sentiment and further noted that accomplishments in their mountain biking careers have had positive effects on their

lives outside of the sport. Thus, it seems that overcoming fear in mountain biking can lead to improvements in everyday life.

Chapter 4: Discussion

This thesis explored experiences of fear and risk from the perspective of mountain bikers in Québec and British Columbia, Canada. The motivation behind this study arose from my own background as a professional mountain biker, and founder of a large mountain biking camp for children and teens. I have always been fascinated with fear and risk, and how they affect different aspects of mountain biking, including how fear and risk affect a student's progress as they develop the skills required to eventually, hopefully, master the sport.

At the outset of this project, one of my aims was to invite mountain bikers to share retrospective accounts of their experiences of sport and physical activity from adolescence onward. I was interested in whether these accounts might help explain why they pursued mountain biking in the first place. The existing literature suggests that an individual's experiences of physical education in adolescence can be a determining factor in their long-term engagement with sports and physical activity (Fraser-Thomas et al., 2008). Because this is the case, I was interested in whether our participants' accounts of adolescence could shed light on the potential for mountain biking to function as an alternative to the more traditional, competition-oriented forms of sport and physical activity that are currently taught in school physical education (PE) classes.

PE demonstrates some harsh realities, including the hierarchies that can form in competitive group activities (Olafson, 2002; Pope & O'Sullivan, 2003). I thus dedicated the first part of our interview guide to questions aimed at identifying how feelings of ambivalence toward PE and team sports might lead individuals to pursue lifestyle sports and adventure sports, rather than more traditional sports such as basketball, or even rather than an individual sport such as tennis (Bernstein et al., 2011; El-Sherif, 2014). I also wondered whether our participants' experiences of PE in adolescence and their subsequent interest in mountain biking would be

influenced by gender; research has shown that girls tend to have a harder time in PE than boys (Fraser-Thomas et al., 2008). However, as I analyzed the data from the eight semi-structured interviews, I found that the subject of PE did not arise significantly when discussing participants' experiences of mountain biking, and that PE did not seem to play a role in their distancing from team sports. More importantly, none of our participants chose to pursue mountain biking due to feelings of marginalization in competitive team sports environments. It is important to mention, however, that of the eight participants, only one had anything negative to say about his experiences of PE in adolescence, calling them *mediocre*. Therefore, I am unable to say anything more definitive about this. Instead, I would need a larger sample of mountain bikers, some of whom have indeed had negative experiences of PE in adolescence, to be able pursue this idea further.

What did become clear over the course of these interviews was that risk-taking behaviours associated with mountain biking were associated with an improved sense of self-worth and well-being, and an increased social circle, which resonates with the findings of Cazenave, Le Scanff, and Woodman (2007). Through mountain biking, my participants felt they had experienced improved social, emotional, and physical outcomes. Furthermore, mountain biking provided participants with a vital peer group: a community from which to find support and encouragement toward a common goal—to improve one's mountain biking skills. This was very important to my participants, and they could not recall having experienced this same sense of community during their PE or team sports years.

Participants demonstrated exemplary sportsmanship with regard to peer pressure from other riders, and acceptance of new riders, regardless of skill level. They unanimously praised their riding cohorts for respecting their comfort zones, while providing the right nudges at the right times to help them overcome their fears. Support, patience, understanding, and motivating, were

terms that commonly arose in responses to questions on the subject of peer pressure. This is a truly exceptional aspect of extreme sports: the ultra-supportive environments that are commonly found there. This level of support arises due to the nature of such a sport: it is individual, and it is dangerous. People in these environments are notoriously humble, and civil, and supportive—characteristics that are developed on the trail—and this is not always the case in team sports environments. In team sports environments there can be pressures and expectations that are absent in individual sports; here, the supportive environments found in extreme and adventure sports are simply the norm (Brymer and Oades, 2009).

Humbling experiences are ubiquitous in the sport of mountain biking and, regardless of skill level, every rider lives through the highs and lows of the sport. None of the participants ever expressed sensing peer pressure or ridicule at any time from their mountain biking peers. This aspect of mountain biking culture appears to align with the findings reported on in other EAS studies with regard to acceptance, reliance on others, and emotional support before, during, and after sporting practice (Brymer & Oades, 2009; Frühauf et Al, 2017; Robert, Jones & Brooks, 2018).

The most important themes that emerged, outlined in the manuscript, shed light on the roles that fear and risk play in the formation of friendships on the bike, in the development of the necessary problem-solving skill sets, and in the life-changing milestones that mountain bikers experience on the trails. My findings are largely consistent with those of existing studies of mountain biking and other EAS subcultures, which have reported on similar benefits of fear (Brymer & Oades, 2009; Brymer & Schweitzer, 2012; Frühauf et al., 2017; Hagen & Boyes, 2016; Malterud et al., 2021; Roberts et al., 2018; Willig, 2008).

However, this study was unique in that I wanted to know not only what the major themes of the mountain biking experience were, but how fear was related to these themes. The three themes mentioned above—friendships, problem-solving, and milestones—were each found to exhibit a component of fear. The overall theme of fear and risk emerged from responses to questions that directly addressed fear and risk. The fear component of the other themes mentioned above arose organically through discussions concerning friendships, problem-solving, and milestones in mountain biking. These results indicate that fear enhances the mountain-biking experience. Engaging in mountain biking necessitates the facing of one's fears; conquering those fears leads to an improved sense of self-worth and self-efficacy. This is in addition to the supportive community that mountain biking provides. The importance of belonging to a strong mountain biking community or subculture reverberated throughout many of the participants' accounts—it is what they love most about the sport.

Some points to consider for the future of this research are the following. The data collection for this study was performed by the principal researcher, who is an expert mountain biker. Data collection consisted of the combing-through of interview transcripts with a view to harvesting significant points made by the participants. Therefore, the subjectivity inherent in the fact that it is one person's opinion of what is significant must be considered; but further to this, what is considered significant or not significant to an expert mountain biker may not be the same as what is significant or not significant to a researcher who is in the field, but who is not an expert mountain biker. In other words, significant points may have been missed in the gathering of the data.

Another point to bear in mind relates to the nature of the sample, which consisted only of expert-level mountain bikers. As mentioned above, I was unable to make any definitive statements surrounding the idea that negative experiences of PE in adolescence may have spurred an initial

interest in the individual sport of mountain biking; this was due to the fact that the participants did not have particularly negative memories of PE. It is possible however, that part of the reason that I did not see ambivalence with regard to experiences of PE or team sports in adolescence might have precisely to do with the athletic nature of the sample. In fact, every one of the participants appeared to be proficient in most athletic settings—in their interviews, participants relayed personal histories of sporting careers that included basketball, hockey, and racket sports such as squash and tennis. Thus, the participants may never have been marginalized in the gymnasium, or in sport, the way that sometimes happens with less athletically competent children (El-Sherif, 2014).

Sport disengagement during adolescence is present in 35% of today's youth in North America. Negative experiences of PE in adolescence are among the primary causes of this disengagement (Fraser-Thomas et al., 2008), with the decline in physical activity numbers coinciding with a shift in focus of PE from enjoyment to performance and results (Timken & MacNamee, 2012). Individual sports such as mountain biking may offer a solution to this problem by providing refuge from the environments found in traditional PE classes and team sports—environments in which some children and teenagers not only do not thrive, but environments that are damaging to their self-concept and self-esteem, which can permanently poison their relationships with physical activity. Future studies to determine the viability of the idea of individual sports such as mountain biking as an alternative to traditional PE should include participants of various levels of skill. Specifically, comparisons should be made not only between groups of varying length of experience (e.g., beginners versus expert-level mountain bikers), but also between groups of varying level of skill (e.g., controlled for number of years of experience).

Despite the fact that the participants did not have negative experiences of PE in adolescence, my study did suggest that individual sports that exhibit an element of risk can act to counter the presently diminishing culture of physical activity (Anderssen, Wold & Torsheim, 2013; Fraser-Thomas et al., 2008). Though the primary objective of this research was not to compare individual sports to team sports, participants' responses to team sports questions were significantly less enthusiastic relative to their responses to questions pertaining to individual sports: "I was never engaged in the idea of team sports" (Andrew, personal communication, Jan. 28, 2022), and "I love team sports though … but I do love being in control of my own performance" (Vaea, personal communication, Feb. 9, 2022). This is not to say that individual sports are superior to team sports; rather, this brings into focus the question of why some people choose to participate in individual sports over team sports. Kajbafnezhad et al. (2011) argued that individuals participating in individual sports versus team sports scored differently with respect to psychological skills, emotional intelligence, and athletic success motivation. It is therefore reasonable to hypothesize that youth-sport disengagement and the subsequent diminishing numbers of people taking part in physical activity might be alleviated to a certain extent were more individual sport options available in current PE environments.

Chapter 5: Conclusion

I performed semi-structured interviews of eight expert-level mountain bikers in order to examine the influence of fear and risk on their experiences of mountain biking, and to see whether their experiences might shed light on the possibility of viewing mountain biking as an alternative to the more traditional sports taught in PE classes as a way of stemming youth-sport disengagement. Of the major themes that emerged from analysis of the data, I found that three are influenced by fear: problem-solving, milestones, and friendships. I thus viewed these three themes as existing under the umbrella of a fourth major theme of fear and risk. I was unable to make definitive statements concerning mountain biking and youth-sport disengagement, as it turned out that the participants had not had particularly negative experiences of PE in adolescence.

Voluntarily exposing oneself to risk such as in the world of EAS, which includes mountain biking, has been compared to behaviours that are considered reckless and pathological (Lyng, 1990; Sandseter, 2009). However, this is an incorrect assessment. An extreme or adventure athlete's approach is not one of recklessness but of systematic analysis. The ability to problem-solve is fundamental to the process of overcoming one's fears; rather than attempting challenges in a reckless manner, the individual must make an analysis of the situation, look for ways to simplify the problem, and then make informed and calculated decisions on how to proceed. Fear in mountain biking leads to improved problem-solving skills.

Moreover, exposure to fear and risk within mountain biking and other EAS can lead to important milestones and transformative experiences. Riders who enter a hyper-focused state in order to overcome their fears are momentarily liberated from the stressors of the outside world, and become open to transformation. Mountain biking develops in the rider patience, improved emotion-regulation, and a sense of humility. Overcoming challenges provides participants with a

sense of fulfilment and pride. These emotional gains carry over into everyday life. Furthermore, the excitement of the sport can help counter the mundanity that is sometimes felt in ordinary life (Brymer & Oades, 2009; Willig, 2008, p.694). Fear in mountain biking leads to milestones that translate into real-life breakthroughs.

Fear and risk also play a significant role in the development of friendships among mountain bikers. Supporting each other through dangerous situations encourages trust. When confronting new challenges, advice and support will often come from more experienced riders, who can become peers and mentors on the trail, even if they may be younger. The result of this collective emotional support is that riders feel encouraged to attempt challenges, but also have the confidence to back out of challenges they do not feel ready to face. Fear in mountain biking leads to life-long friendships, and high levels of support from a vital community of mountain biking colleagues.

Sports disengagement in adolescence is of great concern, as teenagers who disengage from sport during adolescence tend to grow into adults who avoid physical activity (Anderssen et al., 2005; El-Sherif, 2014; Grasten et al., 2014; Olafson, 2002; Philipps, 2012; Ruiz-Perez et al., 2018). Sport disengagement during adolescence is present in as much as 35% of today's youth in North America. The primary causes are physical competence, social acceptance, negative experiences, coach conflicts and lack of sports diversity (Fraser-Thomas et al., 2008). I wanted to investigate whether the reason my participants pursued mountain biking in the first place was due to negative experiences they had endured in PE at school. Had I found this to be the case, I would have proposed that the individual sport of mountain biking be seen as a possible alternative to some of the more traditional team sports taught in gym class as a way of tackling sport disengagement in teens. However, only one of the participants had anything negative to say about his experiences of PE as an adolescent, describing them as "mediocre", and that this had little to do with his initial

interest in mountain biking. Therefore, I am unable to say anything more definitive about this from my cohort of eight expert-level participants. Instead, I would need a larger sample of mountain bikers, some of whom have indeed had negative experiences of PE in adolescence, to be able pursue this idea further. From my cohort of participants, I would conclude that expert mountain bikers do not pursue mountain biking due to negative experiences of PE in adolescence.

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Appendices

Appendix A: Participant Consent Form

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Hello Mr./Mrs.

My name is Jeff Silas and I am the director of Dirt Camp mountain bike camps. I am also a master's student in the Department of Kinesiology and Physical Education at McGill University. I am conducting a research study entitled: *Mountain Biking and adolescents: does fear, risk and cathartic moments foster long term adhesion to sport?* That underlines the importance of individual sports like mountain biking and how they translate to meaningful and impactful changes in personal identity, meaning and transformation. If you are being asked to participate, it is because you are be a suitable research subject given your current age, mountain biking skill level and ongoing commitment to the sport.

Participation in the study is entirely voluntary and participants can participate or decline in any or all aspects of the study and at any time. If after the study has begins, you wish to withdraw, you are free to so and no explanation is required. Should you or any other participant decide to withdraw from the study, any information, recordings or other will be destroyed or deleted unless other permissions are granted by the participant.

Starting in October 2021, I will begin my research with you and others with the goal of synthesizing meanings in mountain biking that affected you and the other participants during your mountain biking career.

The research consists of 1 interview with probably some follow questions by email. This means that the primary investigator (Jeff Silas) will first have one interview via zoom and possibly another email of phone call (*For online zoom interviews, it is not mandatory to participate by video so you may leave your video camera function off).*

It's your interview and you can help set the tone for what is known about your experience in mountain biking as you know it. Each interview will be a one-on-one interview with only principal interviewer and participant.

Any photos, videos or audios recordings from either the interviews or from historical references will only be used by the principal investigator for revision and will not be published or displayed without the permission of the participants. All media related to the study will be stored in a password protected computer that only Jeff Silas has access to. Each interview should last approximately 90 min. No participants name will ever be revealed in written or oral presentations.

All identifiable information will only be accessible to myself and to my supervisor, Dr. Jordan Koch and will be kept under secure conditions.

You may contact Jeff Silas at robert.silas@mail.mcgill.ca or his supervisor Dr. Jordan Koch at jordan.koch@mcgill.ca if you have any questions about the study.

If you have any ethical concerns or complaints about your participation in this study and want to speak with someone not on the research team, please contact the McGill Ethics Manager.

Please sign below if you have read the above information and consent for your son or daughter to participate in this study. A copy of this document form will be given to you and I will keep a copy.

Participant signature

Appendix B: Interview Guide

McGill

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Interview Guide

Pre-Interview Routine

- Introduction of researcher
- Overview of the study
- Signing of consent form if not already done so

Review Timeline

- Take me through your timeline to make sure I didn't miss anything.
- Illustrate (Participant's name) as a child and as an adolescent.
- Key on critical moments.

Main and Follow-Up Questions (if not addressed during timeline conversation):

1. Tell me about your relationship with physical education as well as any team sports you were involved in when you were in elementary or high school.
2. How did you discover mountain biking?
3. Tell me about your first few rides. What did you like about mountain biking? Probe for themes of team vs. individual sports; outdoors; risk; etc.
4. Describe the first dangerous stunt you attempted.

5. Explain to me your progression as a mountain biker. In what ways do these progressions relate to other happenings in your life?
6. Try to recall some important milestones in your mountain biking. Can you think of five moments that you would say had important impacts on you?
7. Describe how you mitigate risk and danger as a mountain biker. How much time were you outside your comfort zone?
8. As you know, this study discusses disengagement from sport in adolescence and the place that mountain biking takes in the life of a mountain biker. What else do you think can help adolescent disengagement from sport?
9. Can you describe the sensation of feeling flow in mountain biking? Can you compare the sensation of flow to anything else?

Concluding Questions:

1. Is there something that we didn't cover in the interview that you would you like to add?
2. Do you have any final comments or questions?

Key Phrases to Stimulate Reflection (Probes):

- Can you expand on that?
- Can you clarify that?
- That's interesting; tell me more about that.

If I'm understanding what you're saying, … [paraphrase previous point from participants]?

Below is a list of questions for the mobile biking interview:

1. Can you take me to a few places on the mountain that stand out in your memory as meaningful or that made an impression on you as you developed your skills?
2. What comments can you make about this terrain, feature, or section?
3. What and where are the most spectacular crashes that you have had?
4. What were the worst injuries you sustained?
5. Did getting hurt ever make you question your choice to continue mountain biking?
6. How would you describe your riding style?
7. Describe the people who have inspired you in mountain biking.