

SILENCE ON 'THE BREAK': EXPLORING CONCUSSION IN CANADIAN WEST  
COAST SURF CULTURE

by

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B.A., University of Lethbridge, 2015

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Kinesiology)

THE UNIVERSITY OF BRITISH COLUMBIA  
(Vancouver)

November 2018

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Silence on 'The Break': Exploring Concussion in Canadian Surf Culture

submitted by Nikolaus Alexander Dean in partial fulfillment of the requirements for the degree of Master of Arts

in Kinesiology

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## Abstract

Over the last decade a burgeoning body of research has emerged that has explored sport-related concussion (SRC) within a socio-cultural context. In particular, this research has focused on the participants of more “traditional” team sports such as rugby, hockey and football, all the while ignoring participants of more “non-traditional” individualized sports such as surfing. This is significant, as over the last decade surfing has seen a surge in participation rates worldwide (Gilchrist & Wheaton, 2017) and has subsequently witnessed a rise in head-related injuries, including SRC. Noting both the increase in participation rates and the rising rates of head-related injuries within surfing, this ethnographically informed study attempted to unpack and situate surf-related concussion within a socio-cultural context by critically exploring how experienced, male and female surfers from Canada’s West Coast understood, perceived, and gave meaning to SRC. The findings revealed that both male and female surfers displayed *head strong* (Liston et al., 2018) attitudes towards SRC, which encouraged risk-taking behaviours and the denial and downplaying of the injury. Moreover, the findings highlighted the intersections of gender and perceptions of risk in relation to the surfers’ understandings of SRC and raised questions as to who is responsible for educating and diagnosing SRC in unregulated sporting contexts. In addition, the study investigated surfers’ perceptions and attitudes towards protective headgear in surfing and explored *why* surfers do not wear protective headgear while they surf. The findings highlighted that the surfers’ reasons for not wearing protective headgear were often guided and influenced by larger social, (sub)cultural, and political factors.

## Lay Summary

Experienced surfers from the West Coast of Canada were interviewed and observed to explore how the brain injury, concussion was understood within Canadian surf culture. The findings revealed that both male and female surfers underestimated, downplayed, and ignored the significance of concussion in surfing. Moreover, the findings illustrated that surfers had mixed understandings of concussion and equally did not know how to properly diagnose, manage, and prevent the injury. In addition, the findings illustrated that surfers would return-to-surf (still concussed) based on three main factors: the wave conditions, their time spent surfing, and peer pressure from other surfers. Finally, the findings highlighted surfers' attitudes and perspectives towards protective headgear (helmets) in surfing and explored *why* surfers did not wear protective headgear while surfing. The findings revealed that surfers' justifications for not wearing protective headgear were guided and influenced by larger social, political, and (sub)cultural understandings and beliefs.

## **Preface**

This thesis is original, unpublished, independent work by the author, Nikolaus A. Dean.

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## Acknowledgment

First and foremost, I would like to thank my supervisor, Dr. Andrea Bundon for your mentorship and guidance throughout this process. Without your continued support this thesis would not have been possible. Thank you so much for everything, Andrea!

Second, I would like to thank my committee members, Dr. Brian Wilson and Dr. Moss Norman for not only providing constructive feedback and support throughout this process, but for also taking time out of your busy schedules to visit and converse with me in my small corner of the annex. Thank you.

Third, I would like to thank the amazing cohort of fellow graduate students who I have had the privilege of working with and getting to know over the last two years. Thank you all for the conversations, coffees, pints, and beach get-togethers.

Fourth, I would like to thank my dear friends and family. In particular, I would like to thank my Mom (Gail), my Dad (Keith), my sister (Nolla) and my grandparents, Newton, Joyce and Phyllis for your unconditional and (when I am in a pickle) financial support. I love you guys so much, thanks for your encouragement and support.

Fifth, I'd like to thank my partner in crime, Karly. Thanks for putting up with my *sociological imagination* (C. W. Mills, 1959), sub-par French speaking, and late-night writing sessions. Most importantly, thanks for keeping me sane and grounded throughout this process. Love you.

Lastly, I would like to thank JJ Bean, Koerner's Pub, The Fox, candy bags, The Smiths, and A Tribe Called Quest for giving me the extra push when I needed it.

## **Dedication**

This thesis is dedicated to Lane and George Willumeit. Thanks for looking out for me.

## **Chapter I: Introduction**

This study explores and analyzes surfers' understanding and attitudes towards sport-related concussion (SRC) within the ethos of Canadian West Coast surf culture. In particular, this study attempts to situate SRC within a broader socio-cultural context by providing a critical examination that explores how experienced male and female surfers come to understand and conceptualize ideas of risk and gender in relation to both SRC and head safety (protective headgear) in surfing. By drawing upon existing literature on concussion, sport, surfing and pain and injury, this qualitative, ethnographically informed study's objectives are threefold in that the study attempts to a) enhance our knowledge and understandings of SRC within different sporting subcultures; b) to better understand surfers' perceptions towards protective headgear within surfing; c) and to critically examine SRC within a socio-cultural context by interrogating how social factors such as gender and risk perceptions may influence one's understanding of SRC and protective headgear within Canada's West Coast surfing subculture.

Currently in Canada there are no bona fide concussion tools or return-to-play protocols for surfers to engage with if/when dealing with a SRC. This raises a number of concerns, as over the last decade surfing has seen a massive surge in participation rates worldwide (Gilchrist & Wheaton, 2017). And while the proliferation of the sport has shown many benefits, studies have also shown that concussion rates in surfing are rising (Nathanson, Haynes & Galanis, 2002; Swinney, 2015; Taylor, Bennett, Carter, Garewal & Finch, 2005; Taylor, Bennett, Carter, Gawarell & Finch, 2004). Noting both the increase in participation rates and the rising rates of concussion within surfing, this study yields the potential to inform and catalyze the implementation of concussion tools and protocols for

surfers to utilize and could also be used to inform and educate surfers, surf schools and surf organizations about SRC within surfing. Moreover, another impetus for this study was based on the fact that over the last decade a plethora of research has emerged that has explored the relationship between sport and the traumatic brain injury, concussion. This previous research has primarily focused on the participants of more “traditional,” team sports such as rugby, hockey, and football, all the while ignoring the participants of more “non-traditional,” individualized sports such as surfing. This distinction is significant, as oftentimes traditional sports will have coaches, trainers, and teammates to assist with diagnosing and treating a potential SRC; however, when it comes to an individualized sport, oftentimes these figures do not exist, making it difficult for participants to properly diagnose, treat, and handle a potential SRC.

Not only does this thesis represent one of the only studies to explore SRC in a non-traditional, individualized, non-contact sporting realm, but the study also renders itself as one of the few studies that has explored SRC through a sociological lens. Currently, only a limited number of studies have explored SRC within a socio-cultural context (see Anderson & Kian, 2011; Benson, 2017; Brayton, Helstein, Ramsey & Rickards, 2017; Cassilo & Sanderson, 2018; Furness, 2016; Liston, McDowell, Malcolm, Scott-Bell & Waddington, 2018; Malcolm, 2018; McGannon, Cunningham, & Schinke, 2013; Sanderson, Weathers, Snedaker & Gramlich, 2017; Ventresca, 2018). Interestingly, out of these studies, all but one study by Liston et al. (2018) have used the methods of discourse analyses or mass-media analysis to analyze the relationships between sport and concussion. Noting this rather homogenized use of methods across sociological SRC literature, this study attempts to depart from these studies by employing the ethnographic methods of interviews, participant observations and reflexive journaling as a way to gain a better insight into the

lived and personal experiences of SRC. More importantly, it offers a way to explore how surfers come to make sense of, reflect upon, and live with their damaged (concussed) bodies. This endeavour not only hopes to fill methodological gaps within previous sociological SRC literature, but also hopes to pave way for more ethnographic-based inquires when examining the relationship between sport and concussion.

This study also fills a few gaps in sociology of sport literature that has explored the nexus of pain, injury, and sport. To date, several studies have explored the relationships and intersections between gender, pain, injury, and sport (see Charlesworth & Young, 2004; Howe, 2001; Messner, 1990; Nixon, 1997, 1996a, 1996b, 1994a, 1994b; Pike & Maguire, 2003; Sabo, 2004; Young & White, 1995; Young, White & McTeer, 1994). However, existing research typically have three things in common they focus on: elite athletes and elite sport; athletes of traditional, contact, team sports; and have exclusively focused on male athletes' experiences with pain and injury. Ford and Brown (2006) addressed the latter gap by assert that there has also been “little critically focused academic work on surfing that addresses explicitly the theme of gender relations” (p. 83) and more glaringly, its relationship to pain and injury within the sport of surfing. In fact, to my knowledge, no sociological study has explored the relationship and intersections of pain, injury, and gender in a non-traditional sport setting. It is through this study that I attempt to address these gaps in existing sport-related pain and injury literature in hopes of broadening our understandings of how non-elite, male and female surfers within a non-traditional sport setting come to understand pain, injury, and SRC.

Lastly, and notably, there have been a number of professional surfers that have recently broken the silence of their (still) dealings with/of SRC and post-concussion syndrome from injuries sustained while surfing. These surfers include: Owen Wright,

Jeremy Flores, Harley Taich, Mercedes Maidana, Ross Clarke-Jones and Dusty Payne. This topped with the fact that two surfers have died in the last six months in Tofino from surf-related head injuries (CTV Vancouver Island, 2018) justifies the need to better understand SRC, head injuries, and head safety within Canadian surf culture.

Collectively, this study not only yields the potential to fill theoretical and methodological gaps in sociology, concussion, and pain and injury literature, but also yields the potential for more substantive implications such as the catalyzation and development of a return-to-surf protocol, concussion tools for surfers to engage with, and/or the creation of more public documents, such as lay findings, videos, and brief write-ups that outline the significance of the study and its overarching findings. Through the mobilization of this study, I hope that I, too, can commit to Cooky's (2017) call for more *public sociology* within the discipline of sport sociology, and at once, hope to also answer Malcolm's (2018) call for more public sociology on the topic of SRC. This call for more public sociology on SRC is important, as Malcolm suggests that sociologists of sport are "well positioned to inform, educate and subsequently...shape grassroots practices" (p. 7); grassroots practices like surf schools, surf instructor programs, and surf lessons. Following both calls for action, it is hoped that this study's findings can not only be disseminated amongst academic communities but can also be presented in more comprehensive forms and across various public platforms in ways that can be easily understood, accessed and applied by surfers, surf schools, and surf organizations moving forward. The following research questions have been devised in order to accomplish the above described objectives: 1) What are surfers' understandings and attitudes towards sport-related concussion? 2) What are surfers' perceptions and attitudes towards protective headgear in surfing?

## **Chapter II: Literature Review**

### **Chapter Overview**

This chapter highlights and provides an overview of pertinent literature that has explored related topics and fields. First, I provide background information on the theoretical lenses employed in this study. Next, I provide context to the Canada's West Coast surf scene and dive into literature that has explored surfing and its encompassing subcultures. In particular, I draw attention to studies that have previously explored the topics of gender and risk within surfing. Following this section, I then explore and highlight some of the germane, and expanding literature that has explored the nexus of pain, injury, and risk within sporting cultures and provide details on the connectedness between the three interrelated topics. Next, I build upon the previous section by drawing attention to literature that has explored SRC and highlight literature that has explored SRC through qualitative methods. Finally, I conclude this section by addressing literature that has explored concussion and head injury in surfing and also make note of other literature that has explored protective headgear in sporting and surfing contexts.

### **Theoretical Approach**

My project is guided by a feminist perspective; one that is characteristic of both critical and interpretive strands of qualitative research (Hesse-Biber & Leavy, 2011). This dynamic theoretical approach is encapsulated by a number of evolving, complex, and multivocal theories that analyze gender as a category of experience in society, and in this case, sporting subculture (Birrell, 2000). Over the last few decades, a number of feminist analyses have emerged that have explored the relationships between an athlete's gender and their experiences of sport-related pain and injury (see Messner, 1990; Sabo, 2004; Young & White, 1995; Young et al., 1994). Guided by these feminist studies, this study attempts to

add to, and expand upon the burgeoning body of literature that has critically explored the nexus between an athlete's gender and their experiences with sport-related pain and injury and the meanings made behind those experiences.

Similar to other studies that have explored the topic of pain and injury in sporting culture through a feminist framework, I have elected to use a *critical interpretivist* approach to view and analyze the data. The impetus for using this particular approach was twofold; first my decision was grounded by previous feminist sport scholars who have advocated for the value of such approach when exploring lifestyle-sporting subcultures like surfing (Wheaton, 2013); and second, it was guided by the expectation that participants of the study would have layered understandings and experiences of SRC that would evoke different gendered perspectives, emotions, meaning, and values when discussing the topic of sport-related injury (Willis, Just & Nilakanta, 2007). Through these speculations it was assumed that critical questioning could generate insights about the larger power relations between gender and one's understanding and attitudes towards SRC in Canadian surf culture. Guided by these understandings, this study attempted to not only critically explore and interrogate the nexus of gender, pain, and injury discourses in relation to one's understanding of SRC, but also attempted to critically explore *how* these meanings and understandings came to be constructed by the participants, as meanings and understandings are never fixed, and rigid, but instead, are subject to change and revise over different times, spaces, and contexts (Hall, 1997). Keeping this perspective in mind, my objective with this project was explicit in that I was not looking for a single truth, or one answer, but was interested in the various ways that meanings and understandings of SRC were constructed and (re)produced within the ethos of Canadian surf culture. Moreover, through my epistemological positioning, I adopted Richardson's (1998) idea of *crystallization*, and



recognized that I was not seeking a singular truth, but was interested in exploring the multiple truths, and multiple ways that surfers understood SRC, and protective headgear within Canadian surf culture.

### **Canada's West Coast Surf Culture**

The activity of surfing off the West Coast of Canada (British Columbia) now dates back sixty years and has both transformed and moulded many of the coastal communities along the Canada's Western shoreline. These one-time blue-collar fishing and logging communities now host surfers from all over Canada and the rest of the world for year-round cold-water surfing (Shilling, 2003). These surf communities include towns such as Ucluelet, Jordan River, Sombrio Beach, and the popular surf destination, Tofino, which has been tokened as "Canada's surf capital" (Rosano, 2016). Although it's difficult to quantify exactly *how* many surfers and tourists flock to Tofino and the rest of the West Coast of Canada each year to surf, what is known is that more than 15% of Tofino's humble 2000 residents regularly put on a wetsuit and take to the chilly Pacific North West waters (Sayer, 2018).

The surf along the West Coast of Canada is uniquely rugged, and at times, bone-chilling cold. With year-round surfing, the West Coast waves seem to ebb and flow throughout the seasons producing heavier surf in the winter, while generating more relaxed waves in the summertime. However, as Shilling (2003) notes, the winter surf is not for everyone (especially beginners), as the winter storms often produce larger, more technical waves that carry greater risk of getting "slammed," "washing machined," or "stuffed" by the drive of the wave force. In contrary to the winter, the summer surf on the West Coast of Canada offers less chaotic waves and presents smaller, waist-high waves more conducive to beginner surfers and longboard riders. Another unique aspect of the West Coast surf culture

is that surfers must cloak themselves in thick, five-millimeter neoprene wetsuits, gloves, booties, and hoods as a way to protect themselves against the harsh Pacific waters. As Shilling (2003) notes, the waters along the West Coast, on average, will range between 5 to 11 degrees Celsius throughout the year. These freezing temperatures, mixed with the fact that coastal communities such as Tofino and Ucluelet face upwards of four meters of rain each year and are occasionally blanketed in snow, make for a truly unique surfing experience. Despite these cold and frigid temperatures, thousands of surfers continually congregate to the West Coast in hopes of riding some Canada's most pristine waves.

A number of popular surf spots scatter the Western coastline, allowing surfers to pick and choose when and where to surf based on the conditions and time of year. Popular surf spots along the West Coast of Canada include: Mackenzie Beach, North and South Chesterman, Cox Bay, Long Beach, Wickaninnish Beach (or "Wiki," as the locals call it), Florencia Bay, Jordan River, and Sombiro. Often these picturesque beaches are nestled into small bays along the coastline that are backed by dense old-growth Douglas firs and towering cedars. Beachcombers, storm watchers, amateur photographers and tourists often populate the beaches themselves while pockets of surfers nestled around makeshift driftwood structures and campfires drinking beer and coffee to stay warm between their surf sessions.

When surfers are out in the thick, grey Pacific waters they are often surfing on slick shortboards made of fiberglass, foam and resin. Using these crafts to manipulate the waters, these surfers will typical surf waist-to-head-high sized waves (3 to 5 feet), with *really* big days reaching double over-head sized waves (10 feet). However, it must be noted that these days remain quite rare around this area and are typically only produced in the winter seasons (Shilling, 2003). The waves in the Tofino area are mostly derived from beach

breaks, which are waves formed by sandy seabeds. These waves are constantly changing due to wind and swell direction; yet these breaks remain safer than most surf spots along the West Coast due to the openness of the area, the sandy bottom, the reduced wave force, and the smaller size of the waves. These waves, thus, render themselves as good beginner waves and as waves to learn and develop techniques on before moving to other surf locations along Canada's West Coast. In contrast to Tofino's waves, the waves at Jordan River (South Island) are formed by what are known as point breaks, which are waves that form from hitting a point of land, or in the case of Jordan River, rocks. These waves either break left or right and require skill to accurately time ones take off and execution of the wave. Moreover, these waves render themselves as more "risky" waves, as the point (at which the wave breaks) adds an additional obstacle and or hazard that surfers must be cognizant of at all times. In addition, these waves tend to break faster and heavier, meaning that surfers must have knowledge on how to accurately time their pop-ups and drop-ins to the surf. Lastly, the waves at Sombrio beach are formed by a reef break, which is when a wave breaks over a reef break, or rocky seabed. These waves, like point breaks, remain quite consistent and require one to have the knowledge and abilities to accurately time their take-offs and drop-ins. Through these different surf spaces, Canada's West Coast is able to not only host surfers year-round but is able to produce waves that surfers of all skill-levels can enjoy and/or progress to. Finally, what really sets Canada's West Coast surf scene apart from other surf locations around the world is the fact that so much of the West Coast still remains un-explored and a number of waves are left to be discovered all along the West Coast of Vancouver Island. This unique aspect attracts both surfers who want to seek out untouched and unriden waves, and also caters itself to the nomadic West Coast subculture.

Though surfing off the West Coast commenced in the late 60s early 70s, it was not until the early 1990s that surfing really blew up along across the West Coast of Canada. This was in large part due to development of new wetsuit technologies which allowed surfers the opportunity to dip into the freezing Pacific waters, but was also growing because of the increased rates of tourism (Shilling, 2003). In response to these expansions, surf shops, surf schools and surf associations started to pop-up and form in communities along the West Coast. In fact, this is when iconic surf shops such as Storm and Surf Sister first emerged, in Tofino and the West Coast's first surfing association, appropriately titled, the British Columbia Surfing Association (BCSA)<sup>1</sup> was established. Since then the BCSA has been engulfed by the governing body, Canadian Surf Association (Surf Canada) (CSA), which was recently acknowledged as the "only national [surf] organization recognized by the International Surfing Association" (ISA, 2017, para. 1). Interestingly, and not that surprisingly, CSA was created in response to the International Olympic Committee's (IOC) announcement that surfing would be included in the Tokyo 2020 Olympic Summer Games. In addition, in the summer of 2016, the CSA was also officially welcomed to the "Canadian Olympic Family" (Canadian Olympic Committee, 2016, para. 1). And while all of these feats have signified drastic shifts within the lifestyle sport, the one thing that remains noticeable is that none of these developments would have occurred without the rapid expansion of the surf industry along the West Coast of Canada throughout the 1990s.

While surfing in the Olympic Games may be on the mind of some surfers, on a more local level, surfers of all levels from across the West Coast have been suiting up for competitions since the mid 60s, with the first International Surf Competition being held on Long Beach (south of Tofino) in 1966 (Shilling, 2003). Since then, the West Coast has

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<sup>1</sup> This association was first incepted in 1993.

witnessed a massive surge in local, national, and international surf competitions including, *The Rip Curl Pro Tofino*, which is hosted at Cox Bay (south of Tofino) and prides itself as Canada's "largest surfing competition" (Tofino Surf, 2018). This event attracts a number of professional surfers from around the world and offers a space and competition to showcase the growing number of professional surfers here, in Canada including locals such as, Sean Foerster, Noah Cohen, Michael Darling, Leah Oke, Hanna Scott and Sanoa and Mathea Olin. In addition to this competition, the West Coast also hosts, the *Bruhweiler Kid's Classic*, which is an annual event that showcases Canada's youngest surfers; *The Triple Plank*, which is a snow, skate, and surf event held in Ucluelet, Tofino, and Mount Washington Alpine Resort; and the *Queen of the Peak* surf competition, which is notably Canada's only all-female surf competition and features Canada's top shortboard and longboard female riders (Tofino Surf, 2018). It is through the rapid expansion of surf competitions and the increased popularity of surfing in Canada, that we are now starting to see that Canada, and in particular, the West Coast of Canada is now emerging on an international level as a surfing destination and surfing hotbed.

Another reason why Canada's West Coast surf culture has been able to flourish is because of its strong ties and commitments to the local surf industry. In fact, between Tofino and Ucluelet, the two surf communities boast over ten surf schools and over fifteen surf shops. These surf shops and surf schools are able to work year-round and are able to support themselves due to the millions of tourists that flock to Tofino and Ucluelet each year (Dodds, 2012). Noting the increase in surf tourism in the 1990s, a number of surf schools emerged in a response to accommodate and capitalize on this growing market of tourism (Shilling, 2003). At the same time, the governing body entitled the British

Columbia Association of Surf Instructors (BCASI) was created<sup>2</sup> to train and certify surf instructors to mandatory safe and efficient instructions skills and mentorship knowledge. Through this program, the BCASI was able to develop standardized safety training and procedures for surf instructors and were able to implement a mandatory surf instructor certification process in British Columbia (BCASI, n.d.). Notably, since then, the program has folded and since been replaced by two other standardized programs, one titled, the National Surf Schools and Instructors Association (NSSIA), which was established in 2005, and a certification program from the ISA which is a standardized program offered to countries and surfers from around the world (ISA, 2018).

From discussion above we can begin to see just *how* the West Coast surf scene has been able to craft and mould itself into its own distinct surfing culture. This of course, was catalyzed by the work and dedication of pioneer surfers in the area such as Jim Sadler, Ralph Devries, Steve Johnson, Dom Domic, the Oke family and the Bruhwiler brothers. Another factor what sets the West Coast surf culture apart from other surf cultures is the West Coast's strong and rapidly expanding female surf presence. Thanks to early female surf pioneers such as Shelley Renard, Catherine Bruhwiler, Krissy Montgomery and Jenny Stewart, Tofino has unofficially been dubbed "the female surf capital of the world" (Sayer, 2018, p. 4). This distinction has clearly translated to the waters around the West Coast, as the West Coast hosts a large number of female surfers of all ages and skill levels. This large contingent of female surfers has subsequently created what Dart (2018) has called "a culture of acceptance" (para. 13) amongst all surfers, but particularly female surfers along Canada's West Coast—an acceptance that is often non-existent, and hard to come by in

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<sup>2</sup> The BCASI was first developed in 2002 by former Surf Sister Surf School founder and owner, Jenny Stewart (BCASI, n.d.).

other surfing cultures around the world (see Evers, 2009, 2004; Olive, McCuaig & Phillips, 2015; Stranger, 2011; Waite, 2009, 2007; Wheaton & Tomlinson, 1998). In particular, Tofino's own Surf Sister surf school has played a major role in the development and growth of female surfers across the West Coast of Canada. Surf Sister is not only the largest all-female surf school in the world (with over 30 female staff members) but is also the organization that spearheaded the now internationally recognized, *Queen of the Peak* all-female surf competition (Surf Sister, 2018). Through organizations like Surf Sister, and competitions like Queen of the Peak, the West Coast of Canada has been able to produce a surfing subculture that not only encourages and enables female surf participation, but a culture that empowers and encourages acceptance of females both in and out of the water.

It is clear that from these aforementioned discussions that the Canadian West Coast surf culture truly distinguishes itself from other surf cultures around the world. It is this distinct culture that regularly attracts the weekend surfers from Vancouver, Seattle and Victoria while also attracting surfers from around the world and tourists who want to try out surfing for the first time each year. This, of course, is great for both the growth of the sport in Canada and beneficial to the local economy. However, on a grimmer note, there have also been more surf-related injuries and surf-related deaths occurring along the West Coast of Canada each year. In fact, two surf-related deaths have occurred in the West Coast waters this year alone (CBC, 2018). These deaths have raised questions about surf-safety along the coast and have sparked conversations about the implementation of surf guard programs along the West Coast, particularly at the more populated breaks. However, despite these raised concerns, no actions have been made so far. These tragedies have left a number of un-answered questions about surfers' safety along the West Coast, and with more and more tourists and surfers alike congregating to these surf areas each year, it is

important to understand the inherent risks within surfing and how to mitigate these risks, especially regarding head-related injuries.

### **Surfing and Surfing Subculture**

Over the last few decades, a number of sociological studies have emerged that have used ethnographic methodologies to explore surfing and its encompassing subculture. In particular, a number of these ethnographically informed studies have set out to explore the layered and complex socio-cultural aspects of surfing subcultures around the world. These studies have explored topics including: surfing and localism (Daskalos, 2007; Usher & Kerstetter, 2015), race and ethnicity in surfing cultures (McGloin, 2017; Wheaton, 2017), embodiment (Evers, 2006, 2004; Ford & Brown, 2006), surf media (Henderson, 2001; Stedman, 1997; Thorpe, 2006), surf technologies (Evers, 2018, 2015, 2014; Gilchrist & Wheaton, 2013), ethics (Olivier, 2010, 2006), and as I will discuss below, gender and risk. By outlining these previous investigations, what becomes clear is the fact that surfing isn't *just* an activity that vagabonds, soul-seekers, and leathered-skinned teenagers gravitate to, but is rather a sporting subculture that is layered with and underpinned by rife political, social, and (sub)cultural forces that impact *how* people interact with the sport, and equally influences *who* gets to partake in the sport. Although critical scholarship in surf-related studies continues to grow, one distinct, and important area of research remains underdeveloped in surf literature, that being the sociological examination of pain and injury within surfing culture. In fact, to my knowledge, *no* sociological literature has explored lifestyle sport participants' understandings of pain, and injury within their respected sporting culture. This rather large void in lifestyle sport research is significant, and requires further exploration, as studies have shown that head-related injuries and SRC in individualized sports such as mountain biking, skateboarding, and surfing appear to be



growing at a steady rate (Gaw & Zonfrillo, 2016). Therefore, by exploring the topic from a critical sociological perspective, I hope to delve into and pull apart some of the deeply layered political, social, and (sub)cultural values and ideologies that impact how head injuries and SRC are dealt with, managed, and prevented within the lifestyle sporting subcultures.

### **Surfing and gender.**

While there have been a number of studies that have explored the relationship between gender and surfing, only a handful of these studies have explored gender relations in surfing subcultures through a critical lens. In fact, Ford and Brown (2006) pointed out this void in surf-literature by asserting that, “there is little critically focused academic work on surfing that addresses explicitly the theme of gender relations” (p. 83). Since their call for more critical studies on gender relations in surfing, there have been a few studies that have explored this topic. First, Evers’ (2009, 2006, 2005, 2004) work illustrated the relationships between the body (and embodiments of masculinity), surfing, and emotions. Through his investigations, Evers (2009) was able to make the argument that gender and embodiments of gender in surfing are fluid, dynamic, and never fixed, and are shaped by “the spatial, biological, psychological and sociological assemblages that are its lived context” (p. 894). Echoing Evers’ work, Waitt’s (2008, 2007) research found that surf-breaks themselves could also act as spaces that both embodied and reproduced meanings and experiences of gender within surfing. Although Waitt noted that these spaces often reproduced dominant gendered norms, Waitt (2008) also optimistically pointed out that different breaks and different surfing contexts “can offer different ways in which gender norms can be challenged, reworked and reshaped” (p. 77). Building upon both of these scholars’ work, Olive et al.’s (2015) study explored how and why females took up

recreational surfing, and explored what surfing meant to them. Through this ethnographic exploration, Olive et al. were able to identify and reveal the different experiences that recreational female surfers faced, including sexism, condescension, and patronizing experiences. By addressing these different experiences in the surf Olive et al. contended that women recreational surfers can and are enacting in alternative ways within surf spaces as a way of “creating ever-changing space for new ways of doing and knowing surfing to emerge” (p. 260).

### **Surfing and risk.**

To date, only one sociologist has explored the topic of risk within the lifestyle sport of surfing. Mark Stranger’s (2011, 1999) studies found that the aestheticization of surfing often encouraged and enabled surfers to take greater risks in the pursuit of ecstatic, transcendent experiences. As Stranger (1999) stated, “the risk orientation of surfing is inherent in a chase for the thrill of self-transcendence” (p. 273). Stranger further made the argument that surfing is not a risk-taking sport because of its high fatality rate, but rather because it is “pursued primarily for the thrills involved—a quest that typically entails critical levels of risk” (p. 267) a pursuit that he argued could lead to high-rates of physical injuries, such as head injuries. In fact, Stranger (2011) pointed out that any injury in surfing, “especially a knock to the head [could present] a far greater risk than the same level of injury on a playing field, but statistical comparisons fail to recognize this” (p. 95). This point was further emphasized when he noted that surfing, when compared to other mainstream sports, presents even greater risk due to the fact that mainstream sports such as hockey, football, soccer and rugby have coaches, trainers, and first aid attendants at hand, “while surfers can be totally alone and/or long distances from medical assistance” (p. 96). Through Stranger’s findings we can see just how inherently risky surfing is and can be and

why surfers continually seek out and pursue more risky waves while they surf.

### **Pain, Injury, and Risk in Sporting Cultures**

Over the last few decades a number of sociological studies have emerged that have explored pain, injury, and risk within sporting cultures. As Nixon (2004) noted, pain and injury have cultural and social dimensions, and pointed out that cultural context, social structures, and social status *all* shape how athletes understand, perceive, experience, and respond to pain and injuries within sporting contexts. Several sociologists have suggested that sport occurs within a cultural context that often normalizes and glorifies ideas of risk, pain, and injury, and pressures athletes to play with and through pain and injury (Curry & Strauss, 1994; Curry, 1993; Hughes & Coakley, 1991; Nixon 1993a, 1993b 1992; Young, 2012, 2004). These particular ideas underscored what Nixon (1992) termed the *culture of risk*— a culture that not only encourages athletes to accept risk-taking behaviours in sport, but also encourages them to hide, downplay, and trivialize pain and injury as a way of committing oneself as a true athlete. Since Nixon's (1992) study, a number of ethnographic studies have examined the culture of risk within sport and have highlighted both the nuances and connectedness between pain, injury, and risk within different sporting cultures (Howe, 2001; Pike, 2004; Pike & McGuire, 2003; Roderick & Waddington, 2000; Sabo, 2004; Safai, 2003; Young & White, 1995; Young et al., 1994).

In Nixon's (1992) study, he also pointed out that one of the reasons why these normalized ideas and messages about pain, injury, and risk have been reproduced within sporting cultures is because of the strong influence of *sportsnets* that exist within sporting cultures. Sportsnets, according to Nixon (2004) are the social networks that exist within sporting context and are often comprised of teammates, coaches, trainers, fans, and others directly or indirectly linked to the sport-related environment. It is through sportsnets that

cultural messages justifying risk, pain, and injury are communicated and reproduced as a way of complying with what Hughes and Coakley (1991) have termed, the *sport ethic*, which is a deeply held belief and embodiment that encourages athletes to make sacrifices while competing, and to play with and through pain and injury in their quest for success within their sporting culture. The embodiment of the sport ethic not only defines “what it means to be a real athlete,” (p. 308) but also encourages deviant behaviours, and/or risky-behaviours a way to comply with the sport ethic within these cultures of risk (Hughes & Coakley, 1991).

### **Gender, risk and sport.**

Risk-taking is a routine aspect of everyday life that transpires from interactions, settings, occupations and subcultures (Hunt, 1995; Lupton, 1999; Lyng 1990). This social construction not only manifests itself in different ways within different contexts, but also defines group boundaries, internal subdivisions, and group norms (Hunt, 1995). As Donnelly (2004), Sabo (2004), Young et al. (1994), and Hughes and Coakley (1991) have pointed out, individuals who do not engage in risky behaviours, or those who cannot handle pain, and injury within sporting contexts may not be granted status as full members, or worst, may be ostracized and disowned by the group for not committing or conveying oneself as a real athlete. While these studies have shown the linkages between voluntary risk-taking and sporting cultures, a number of researchers have also explored the links between gender and voluntary risk-taking behaviours in sport (see Beal & Wilson, 2004; Donnelly, 2004; Hunt, 1995; Kay & Laberge, 2004; Lupton, 1999; Pike & Maguire, 2003; Robinson, 2004; Thorpe, 2007). These studies have suggested that sporting cultures often promote and encourage risky behaviours as a means of performing and embodying

dominant forms of masculinity and have pointed out that gender intersects with the ways participants “do” risk in sporting contexts (Laurendeau, 2008).

### **Gender, pain, injury and sport.**

Finally, a burgeoning body of sociological research has explored the relationships between gender and one’s experiences with pain and injury in sport. Foundational research from Young et al. (1994) explored how elite male athletes came to experience and make sense of their own sport-related injuries. This study illustrated that elite male athletes were often socialized through interactions within their sportsnets (Nixon, 1992) into thinking that “real men” and “real athletes” must conceal and ignore pain and injury while competing as a way of complying to the *sport ethic* (Hughes & Coakley, 1991) within sporting culture. Following this study, Young and White (1995) conducted a follow up study that explored elite females’ experiences and understandings of pain and injuring within elite sporting culture. In this study, they found that female athletes were just as willing as male athletes to expose themselves to physical risks, and subsequently play with and through pain and injury while competing. Moreover, Young and White found that female athletes “were unreflexive on matters such as being pressured to perform aggressively” (p. 51) and illustrated that gender *did not* impact the ways in which elite level male and females’ experienced and understood pain and injury within sporting culture. In addition, other sociological studies from Messner (1992, 1990) found that male athletes would often use their “bodies as weapons” to achieve goals and to be successful within a sporting context and found that these masculinized understandings were not only (re)produced internally, but were also (re)produced externally from coaches, teammates, spectators and others who often influence and pressure athletes to “give up their bodies” (p. 72) by playing while in pain or injured. Collectively, these previous sociological studies were able to illustrate that

both male *and* female athletes were just as willing to accept risks, and to play while injured or in pain as a way of showing one's commitment, upholding one's athletic identity and presenting oneself as a real athlete.

Since these initial studies, a number of other studies have emerged that have explored the saliences between gender, pain, injury, and risk within various sporting cultures (see Charlesworth & Young, 2004; Pike, 2004; Pike & Maguire, 2003; Safi, 2003). These studies drew similar conclusions to the previously cited literature with a few key differences and nuances. For example, Sabo (2004) used the concept of *pain principle* to explore male and female athletes' experiences with pain and injury in sport. The pain principal, as Sabo (2004) described,

Is defined as a patriarchal cultural belief that pain is inevitable and that the endurance of pain enhances one's character and moral worth. Pain is regarded as more important than pleasure, and sacrifice is assumed to be required in order to establish self-worth, social acceptance, and status gain. (p. 64)

Guided by this concept, Sabo revealed similarities between the ways that male and female athletes learned to accept risks, play with pain and injury, and comply to the demands of coaches. While these findings echoed what previous literature has suggested, Sabo's study also found that women's commentaries on sport injury and pain "displayed a consciousness of gender that men's commentaries did not" (p. 73). In fact, Sabo pointed out that male athletes commonly integrated traits and embodiments associated with hegemonic masculinity<sup>3</sup> (Connell, 2002) into their experience with pain and injury, but did not

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<sup>3</sup> Connell's (2005) notion of hegemonic masculinity stems from her gender order theory that recognizes that multiple masculinities can vary across lifetimes, cultures, spaces and individuals. Hegemonic masculinity is a concept used to explain the practices that legitimize men's dominant positions in society and justifies the

recognize that their understandings were underlined by gendered ideals, whereas female athletes were cognizant of gendered meanings surrounding sports and pain and injury, but were often sceptical of the masculine scripts that celebrate and trivialize pain and injury in sporting context. In closing, Sabo suggested that more and more women were buying into the pain principle behaviourally, but in contrast to male athletes, many were denying its cultural associations with masculinity, and their own experiences with pain and injury.

Nixon (1997, 1996a) also explored gender in relation to pain and injury in sport. In his (1997) study Nixon found that contact sports may induce and or reinforce aggressive behaviours outside of a sporting context amongst male and female athletes. This finding not only showed the inherent relationship between contact sports and aggressive behaviours, but also highlighted how aggressive behaviours could transcend outside of sporting cultures. Moreover, Nixon's (1996a) study highlighted that men and women who had a higher proportion of male athletes amongst their close friends were more likely to be exposed to attitudes, and dialogues that encouraged, and celebrated ignoring and denying pain and injury and/or at least giving the appearance that they were ignoring the pain. In closing, though this previous research has pointed out the intersects between gender, pain, injury and risk, what Nixon (1996a) and Young (2004) pointed out was that more sociological research is needed to better understand female and male athletes' experiences of sport-related pain, and injury, and to better understand the ramifications of these experiences.

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subordination of women and other marginalized males. The concept poses to explain and unpack why men maintain dominant positions of power over women and other gender identities.

## **Sport-Related Concussion**

It is currently estimated that between 1.6 and 3.8 million SRC occur annually in the United States alone and account for just over 9% of all sport-related injuries (King, Brughelli, Hume & Gissane, 2014; Mrazik, Brooks, Jubinville, Meeuwisse & Emery, 2016). Concussion can be understood as a traumatic brain injury induced by biomechanical forces that is caused by either a direct blow to the head, face, neck or elsewhere on the body where an impulsive force is transmitted to the head (McCrory et al., 2017). This brain injury is the most common form of traumatic brain injury (TBI) and occurs at higher-rates amongst athletes age 15 to 24 (King et al., 2014). Notably, studies have indicated that athletes participating in sports like football, rugby, hockey, and soccer are more likely to sustain a SRC compared to participants of other sports (Marar, McIlvain, Fields & Comstock, 2012) and epidemiology studies have suggested that female athletes are at a higher-risk of incurring a concussion than male athletes (Covassion, Elbin, Crutcher & Burkhar, 2013; Hootman, Dick & Agel, 2007). This may be explained by the fact that females are more likely to report a SRC than male athletes but does not explain *why* females suffer more severe TBI's and *why* they require longer duration to recover (King et al., 2014). These questions along with a handful of other questions add to the layering complexities of this injury. In fact, McCrory et al. (2017) pointed out that SRC are “considered to be among the most complex injuries in sports medicine to diagnose, assess and manage” (p. 2) and noted that more research is needed in order to better understand this complex brain injury.

Common symptoms of concussion include, but are not limited to headaches, dizziness, nausea, sensitivity to light and noise, drowsiness, confusion, and amnesia (King et al., 2014). Although most concussive symptoms resolve within less than two weeks,



some symptoms may extend for months or even across one's life (McCrorry et al., 2017). One of the prolonged symptoms/effects that has been linked to concussion is development of a degenerative brain disease known as chronic traumatic encephalopathy, or more colloquially known as "CTE." CTE often begins with behavioural and personality changes, memory difficulties, aggression, mood swings, and depression and can be followed by progressive dementia, and suicidality (Gaetz, 2017). The disease is not the result of an endogenous disease such as Alzheimer's but is rather, the result of TBI—the type that routinely occurs in contact sports such as football, hockey, rugby and lacrosse (McKee et al., 2012). Through recent research and cultural awareness, more attention has been drawn to the issue and other complexities surrounding the linkages between SRC and CTE; however, similar to SRC, CTE also remains quite complex, difficult to diagnose (can only be diagnose once deceased) and requires more comprehensive evaluations to determine the relations between SRC and CTE (McCrorry et al., 2017).

Not only is this injury complex but is often very difficult to diagnose. As King et al. (2014) noted, concussion symptoms, by their very nature, are quite subjective and remain contingent on a few aspects including, the athlete's awareness and knowledge of the injury, and an athletes' honesty and willingness to accurately provide information. In addition to these concerns, studies have suggested that female athletes are more likely than male athletes to disclose of a concussive injury (Sanderson et al., 2017) and suggest that one of the reasons why this may be is due to the stigmatizing nature of the injury and how the injury is often trivialized and downplayed by both the media and sporting circles (Khurana & Kaye, 2012). Moreover, what makes this injury difficult to diagnose is the fact that some symptoms may not be present for every athlete, making concussion an individualized injury that should be treated case-by-case (King et al., 2014). Finally, what makes this injury

difficult to diagnose is the fact that there are no perfect diagnostic tests of marker, or tools that clinicians, trainer, or coaches use and rely upon within sporting environments (McCrory et al., 2017).

### **Socio-cultural concussion literature.**

Over the last decade a plethora of studies have emerged in response to the current “concussion crisis” (Carroll & Rosner, 2012, p. 7) that we are in. These studies have almost exclusively analyzed the topic of SRC from a few main disciplines including, psychology, neurology, sensor-motor physiology, and epidemiology. Although these studies have been able to highlight and discuss some of the physiological and neurological intricacies of this injury, little research has examined the topic of SRC through a sociological lens. This gap within concussion literature presents a significant void, especially in terms of understanding the social, political and cultural relationship(s) between the injury and sport. McGannon et al. (2013) addresses this void by arguing that research from sport sociology can provide us with “compelling evidence that psychosocial issues of sports injuries such as concussion can be further understood within the context of socio-cultural influences” (p. 891). To date, the majority of studies that have explored SRC through a sociological lens have employed the methods of mass media analysis and various textual analyses to explore the topic (see Anderson & Kian, 2011; Benson, 2017; Brayton et al., 2017; Cassilo & Sanderson, 2018; Furness, 2016; McGannon et al., 2013; Sanderson et al., 2016; Ventresca, 2018). A number of these studies highlighted how SRC was framed in media, and concussion-related films, and discussed how these framings often evoked and portray particular gendered, and racialized understandings of SRC. Guided by these findings, three notable sociological studies elected to build upon these studies by employing the use of

interviews and open-ended questionnaire surveys to explore athletes' perceptions, understandings, and management strategies of SRC.

First, Kroshus, Garnett, Hawrilenko, Baugh and Calzo (2015) study explored the topic of under-reporting SRC and its links to pressures from coaches, teammates, fans and parents. In their analysis, Kroshus et al. (2015) found that both the sporting environment and important individuals (i.e., coach, trainer, fans, teammates) within that sporting environment played a critical role in whether or not the athlete would disclose of an SRC. In fact, they pointed out that these important individuals often played the most critical role in determining if an athlete were to disclose or more importantly not disclose a potential SRC. This study not only showed the significance of external pressures, but also highlighted the significance of sporting subculture and the sportsnets (Nixon, 1992) that exist within them in relation to SRC. Similarly, Sanderson et al. (2017) investigated female and male athletes' experiences reporting SRC while competing in sport. Using open-ended questionnaires, Sanderson and company were able to determine that male athletes were more likely to play through their injuries and not report a SRC than their female counterparts. In addition, they found that the main reasons athletes *did not* report a SRC were because of: 1) perceived lack of resources available, 2) perceived lack of severity, 3) and conformance to sport cultural norms and team allegiance.

Finally, and most recently, Liston et al. (2018) conducted a study on the topic of SRC in non-elite sport (rugby). They employed the use of semi-structured interviews to explore how non-elite athletes perceived, gave meaning to, and managed SRC in their sporting culture. The findings revealed that the athletes displayed irreverent attitudes towards SRC, which both encouraged risky behaviours and promoted trivialized understandings of the injury such as the downplaying and denial of the significance of

SRC. Interestingly, the study found that those who had been previously diagnosed with a concussive injury before had showed greater awareness of, and knowledge about the injury than those who had not (Liston et al., 2018). Despite this, the study also found that overall, SRC was deemed as a “less serious injury” and an injury that “players were less concerned [about]” (p. 11). The study also found that athletes demonstrated functionalist understandings and interpretations of injury, whereby the significance of an injury was based on the time lost from sport. However, in the case of SRC, many of the athletes were able to continue playing after a concussive injury. By this definition SRC was considered as a less serious injury, and an injury that players were not concerned about. Based on the findings, the researchers were able to theorize and develop the concept of being *head strong* to explain an athletes’ wilfulness to conceal concussion and play on with their concussive injuries as a way of adhering to cultural commitments to the game, and to other players. Collectively, this study not only provided future studies with a new methodological approach for exploring SRC, but also provided a useful theoretical concept to be applied and expanded upon in other sociologically based SRC studies.

### **Concussion and head injury in surfing.**

A recent study by Woodacre, Waydia and Wienand-Barnett (2015) found head injuries to be one of the most common injuries sustained amongst surfers. Although Booth (2004) and others have suggested that surfing is a “relatively safe sport,” studies have also indicated that head injuries are occurring more frequently in surfing. For example, larger epidemiology studies on surf-related injuries have suggested that head injuries account for somewhere between 25% (Nathanson, Bird, Dao, & Tam-Sing, 2007) and 43% (Ulkestad & Drogset, 2016) of all surf-related injuries. In fact, Nathanson et al. (2002) reported that scalp and face injuries were *the* most commonly injured body parts from surfing. The term

“head injuries,” has been vaguely used in these previous studies to indicate any head or facial injury including lacerations, fractures, contusions, eye injuries, neck injuries, and concussion (Taylor et al., 2005). To date, studies suggest that concussion accounts for somewhere between 6% (Ulkestad & Drogset, 2016) and 37% (Swinney, 2015) of all surf-related injuries. Although there appears to be quite a large discrepancy between what these previous studies suggest, we have to be reminded that it is actually quite difficult to capture accurate rates of concussion in any sporting context, as the injury is difficult to recognize, symptomize, and diagnose (McCroly et al., 2017). Nevertheless, what these studies findings did indicate is that concussion rates may be occurring more frequently in surfing than originally suggested. Ulkestad and Drogset (2016) identified the importance of head-related injuries in surfing by pointing out that “concussion injuries can be especially dangerous if the surfer loses consciousness in [the] water” (p. 158). This point coupled with the fact that Nathanson et al. (2002) found that over 8% of all surf-related concussions resulted in near drowning experiences articulate the stark realities and severities of SRC in surfing environments.

Ulkestad and Drogset (2016) outlined the most common mechanisms for sustaining an injury while surfing. Unsurprisingly, contact with a surfboard was the most common cause of injury, resulting in 47% of all surf injuries while contact with the seafloor (25%) was the second most common mechanism. Finally, surf manoeuvres (14%) and wave force (8%) rounded out the other common causes of injury in surfing. In addition, studies have also found that older male shortboard surfers, more advanced surfers, and large wave surfers were at the greatest risk of injury while surfing (Hay et al., 2009; Klick, Jones & Adler, 2016; Steinman et al., 2000; Taylor et al., 2004). Moreover, a number of studies have pointed out the significance of both the surfing environment (wave height, rocks,

water temperature), and the time of year in relation to surf injuries. In fact, studies have found that surfing during the winter months actually produced higher rates of injury, and more severe injuries than surfing in the summer (Hay et al., 2009; Nathanson et al., 2007; Ulkestad & Drogset, 2016). In particular, Hay et al. (2009) found that higher-rates of injury occurred in the winter because of larger waves, and surfers' attractions to these waves, which subsequently exposed them to greater risk of serious injury. In addition, Nathanson et al. (2007) found that the risk of injury was greater when surfing waves overhead or bigger, and when surfing over rocks, or reef bottom compared to sandy bottom. Collectively, these studies not only suggested that a surfer's experience and gender played a role in one's susceptibility of sustaining a surf-related injury, but also illustrated that the environment and wave conditions could also increase the risk of sustaining a surf injury.

### **Protective headgear in surfing and sport cultures.**

Noting the increase of head injuries from surfing, a number of surf-related studies have made adamant requests for increased use of protective headgear amongst surfers (see Hay et al., 2009; Nathanson et al., 2002; Swinney, 2015; Taylor et al., 2005, 2004; Ulkestad & Drogset, 2016). The impetus for these requests have been based on the idea that protective headgear would reduce lacerations, concussions, and ruptured eardrums (Nathanson et al., 2002; Taylor et al., 2004). Despite this call for the use of protective headgear in surfing, only 1% to 8% of all surfers wear protective headgear regularly (Taylor et al., 2005).

To date, only one study has explored surfers' perceptions of protective headgear in surfing. In Taylor et al.'s (2005) study they found that only a few surfers considered surfing to be associated with high-risks and only one-third of the surfers actually had considered the risk of head injury while surfing. In fact, Taylor et al. found that "half of the surfers

would rather risk an injury than wear protective headgear” (p. 78). Despite these beliefs, more than half of the surfers in the study believed that protective headgear would in fact, decrease the risk of head injury. The study also revealed that surfers did not wear protective headgear for three main reasons 1) they thought that there was no need for protective headgear in surfing 2) they disliked wearing helmets and reported them as being uncomfortable or affecting their performance 3) and finally, a number of surfers indicated that they had never thought of it or never bothered to wear one.

While a number of these surf-injury studies called for the use of helmets in surfing, a few studies have also speculated on whether or not protective headgear would *actually* reduce the risk of serious head injury, and more importantly concussion (Ulkestad & Drogset, 2016; Woodacre et al., 2015). In fact, as Daneshvar, Baugh, Nowinski, McKee, Stern and Cantu (2011) suggested that although helmets and mouth guards may protect against catastrophic head, neck, and facial injuries, “there is not significant evidence to advocate their effectiveness in preventing concussion” (p. 157). In addition, Hagel and Meeuwisse (2004) pointed out that helmet use has actually been shown to increase one’s likelihood of taking greater risks and thus, sustaining more severe injuries due to a false sense of security. Nonetheless, what these conflicting findings illustrated is that on one hand, protective headgear does protect *some* aspects of the head and neck; however, on the other hand, there has not been enough evidence to suggest the use of protective headgear prevents and/or minimizes SRC. Despite these conflicting views, one thing remains clear, more research is needed to explore the effectiveness and perceptions towards protective headgear within surfing.

## **Gaps in Existing Literature**

Based on what has been presented in this literature review, I now will briefly identify what gaps in literature this research intended to fill. First, to my knowledge, there have been no sociological examinations of Canadian surf culture. This surf culture, as highlighted above appears to distinguish itself from other surf communities because of its community (of acceptance), its location, and its surf conditions. Based on the uniqueness of the surf locale, I hope to address the significance of the surf community and particular surf environment in relation to overarching research questions. Second, to date, most of the sociological literature that has explored pain, risk, and injury has focused on the participants of more “traditional,” team sports with contact involved (i.e., football, rugby, basketball, hockey) all the while, ignoring the participants of more “non-traditional,” individualized sports such as surfing. This is significant as both surf-related studies (Taylor et al., 2005; Ulkestad & Drogset, 2016; Woodacre et al., 2015) and other epidemiology studies (Gaw & Zonfrillo, 2016) have indicated that head injuries and particular concussion rates appear to be occurring at high rates in individualized sports. Noting this growing trend, this research attempted to unpack surfers’ understandings, perceptions, and attitudes towards both SRC, and protective headgear as a way of drawing attention to some of the larger social, political, and subcultural forces that underline these attitudes and understandings. In addition, this research answered Young’s (2012) calls for the use of more qualitative research methods to examine the topic of pain, risk, and injury in sport, and also answered his call for more research on female athletes and their experiences, perceptions, and understandings with pain and injury. Lastly, as Dumas and Laforest (2009) stated that health risks such as concussion have been viewed almost exclusively through epidemiology, while sociology has yet to provide research on the topic of injury. This



statement is no exception to SRC research, as only a handful of studies have explored SRC through a sociological lens or through qualitative methods. Noting this gap, this study not only attempted to add to the growing body of literature that has explored SRC through a sociological lens, but also hoped to answer Malcolm's (2018) call for more public sociology on the topic of SRC. In doing so, I anticipate on provided the findings in a way that that can be taken up, disseminated, and understood by academics across fields, but most importantly hope to create materials that can be easily understood and digested by surfers, parents, and surf instructors moving forward.

## Chapter III: Methodology

### Chapter Overview

This chapter focuses on the methodology employed throughout the research process. In particular, this chapter first discusses the rationale behind the methodology used in the study. Second, this chapter provides detailed information about study's sample and highlights *how* the participants were recruited. Third, details are provided about *what* methods were used to collect data, followed by information on *how* the data was analyzed and *what* techniques were imposed throughout the data analysis. Lastly, this chapter concludes by addressing some of the ethical considerations that were made and implemented throughout the research process, and also speak to my role as a cultural insider throughout the research process, and how it was (re)negotiated.

### Rationale

This thesis builds upon and was guided by previous lifestyle sport literature that used ethnographic techniques and traditions to explore various lifestyle sporting subcultures and its members (see Beal, 1996; Booth, 2001a, 2001b; Evers, 2018, 2009; Ford & Brown, 2006; Olive et al., 2015; Stranger, 2011; Usher & Kerstetter, 2015; Waitt, 2008; Waitt & Warren, 2008; Wheaton & Tomlinson, 1998). Guided by these foundational ethnographic lifestyle sport studies, this study employed the use of semi-structured interviews, participant observations (field notes), and reflexive journaling. As Atkinson (2012) points out, ethnographic techniques such as semi-structured interviews and participant observations can allow researchers the opportunity to “learn the inner workings” (p. 29) and understandings of subcultural groups and can use these understandings as a way to explain how and why the cultures operate the way they do. To date, only a few studies have employed qualitative methods to explore the relationship between pain, injury and

sport (see Howe, 2001; Pike & Maguire, 2003; Young & White, 1995; Young et al., 1994). And while this literature has paved a way for future studies to follow, Young (2012) also highlighted the need for more qualitative-grounded studies by stating that,

The bulk of our knowledge of sports-related injury and pain derives from surveys and other quantitative techniques conducted in the other sports sciences and by the sport industry itself which, while useful in its own way, does not normally illuminate key matters such as how pain and injury are lived, reflected upon or revolved at various levels. (p. 115)

This study is aligned with Young's call in that it attempted to highlight and explore the lived, and personal experiences of SRC, and how surfers came to make sense of, and provide meaning to SRC through the employment of qualitative, ethnographic methods.

Literature that has explored SRC has, for the most part, neglected the use of qualitative methods when examining the relationships between concussion, the body and sport. This is significant, as self-report surveys, and quantified statistical analyses can only tell us so much about the injury and how it occurs, why it occurs, and how to properly manage it, all the while ignoring the larger social, (sub)cultural, and political forces that influence the ways participants deal with, experience and treat SRC. It was through the employment of qualitative methods that this study attempted to (re)address SRC within a socio-cultural context, while adding to the small, yet burgeoning body of concussion research that has used qualitative methods to explore concussion within sporting culture (see Anderson & Kian, 2011; Benson, 2017; Brayton et al., 2017; Liston et al., 2018; Malcolm, 2018; McGannon et al., 2013; Sanderson et al., 2017; Ventresca, 2018). By using these three methods, it was anticipated that this multi-dimensional approach would not only

generate rich nuanced data but would also adequately answer and support the study's overarching research questions.

## **Sample**

The sampling method used in this study was purposive sampling. As Bryman (2015) explains, purposive sampling is a “non-probability form of sampling” that strategically, and purposefully recruits participants “relevant to the research questions that are posed” (p. 408). For the purpose of this study, two distinct groups were recognized and recruited: experienced male surfers and experienced female surfers from Canada's West Coast. These two distinct groups were recruited and sought-after for a few reasons. First, only experienced<sup>4</sup> surfers were recruited for the study. The rationale behind this decision assumed that these surfers would mostly likely have more in-depth knowledge and experiences with surfing, the West Coast surf scene, and pain, injury, and concussion within the sport. Equally, seeking out experienced participants, proved to be invaluable, as oftentimes these participants were able to connect the researcher with other experienced surfers from the tight-knit, West Coast surf community, thus granting the researcher access to key participants that otherwise would never occur.

Second, by drawing upon the experiences of both female and male participants, this study really attempted to gain a much more comprehensive understanding and analysis of concussion within Canadian surfing culture. By analyzing both male and female surfers, this study yielded a unique opportunity to further develop and add to the growing body of sociological literature that has explored the nexus of gender, pain, and injury in sporting

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<sup>4</sup> The term “experienced,” of course, needs to be unpacked here. While experience is quite tough to capture and to quantify, for the purpose of the study, the researcher deemed an experienced surfer by having approximately five years of surfing experience. It was through this rather rudimentary quantification that the researcher was able to distinguish experienced surfers from beginner surfers, and professional surfers.

culture (Charlesworth & Young, 2004) and provide a more comprehensive study of concussion within Canadian surfing culture. It was important to gain perspectives and understandings of concussion from both male and female participants, as concussion literature (both qualitative and quantitative), to date, has really neglected to include the statistics, perspectives, experiences, and understandings of concussion from female athletes/participants.

Finally, *where* the participants were from was very significant to both the study and the research questions being asked. For the purpose of the study, the researcher wanted to localize the sample to Canadian, West Coast surfers only. The logic behind this was two-fold in that this particular surf community has been (and still is) underexposed and underrepresented in surf literature and surf media. This vacancy within surf literature offered a unique opportunity to explore an untouched sporting subculture in the hopes of expanding upon and adding to other surf studies. Moreover, the main impetus for selecting this particular sample was geographical location. Not only was the location within close proximity of the researcher (~6 hours), but the surf spaces and geographical make-up of the West Coast of Canada offered a unique analysis due to its remoteness, and uniquely dangerous surf breaks not found at other surf locations around the world. These dangerous spots include characteristics such as: jagged rocks, floating logs (from Canada's logging industry), remote and undiscovered breaks, hike-in only locations, and moody weather conditions that change seasonally. By exploring the participants' experiences within these unique surfing spots, it was anticipated that the surfers would discuss the geographical uniqueness of Canada's West Coast in relation to the research questions, but also in comparison to other surf locales around the world.

The requirements to participate in the study were outlined in the *letter of introduction* (Appendix I), and in posters (hard copy and digital) (Appendix II). These requirements included that: the participant had to be an experienced male or female surfer living on the West Coast of Canada and had to be over the age of eighteen. Each potential participant was sent a letter of introduction, which gave a detailed outline of the study and what participation in the study entailed; a consent form, which outlined the participant's rights and consent (Appendix III); and a participant demographic to be completed prior to the interview (Appendix IV). The participant demographic form was meant to elicit information regarding the participant's surf experience, whether they used protective headgear and or if they had previously sustained a SRC while surfing. Collectively, these questions not only gave the researcher valuable background information about the participant, but also allowed the researcher to alter and create interview questions that were more related to the participant's personal experiences.

In total, twelve participants were recruited—six male participants and six female participants. The sample was homogeneously white, able-bodied, young individuals with the average age of twenty-eight. The averaging years of surfing experience across the sample was just over nine years. Interestingly, almost all of the participants had indicated that at one time or another, they had lived or travelled to locations around the world to surf. This not only illustrated the dedication of these surfers, but also exemplified the experience and expertise that these surfers had coming into this research project. In addition to these international experiences, a number of the participants indicated that they had worked within the Canadian surf industry. In total, five of the participants indicated that they were surf instructors; while three indicated that they had or were working in the Canadian surf industry (working at surf shops and/or shaping surfboards).

The participants came from a number of different locations along Canada’s West Coast including: Vancouver, Victoria, Tofino, Ucluelet, and one participant who lived nomadically with no fixed address. By having this geographically diverse sample, it was anticipated that the study would gain a much more holistic understanding of Canada’s West Coast surf culture, and at once, give a more comprehensive analysis that would adequately answer the study’s overarching research questions. Lastly, over half of the participants had disclosed that they had experienced at least one or more surf-related concussions throughout their surf careers. This was quite significant, as the participants were not only able to generate rich, insightful stories about their own experiences with surf-related concussion but were also able to address the study’s overarching questions. See Table 1 for detailed demographic information about the participants of the study.

Table 1  
*Participant Information*

Name	Gender	Race	Age	Surf experience	Helmet Use?	SRC? Surfing	Occupation/ Involvement	Location
Eden	F	W	24	6	No	No	Surfer	Vancouver
Evan	M	W	29	12	No	Yes	Surf Instructor	Ucluelet
Jimmy	M	W	35	15	No	Yes	Surfer	Victoria
Johnny	M	W	25	12	No	Yes	Surf Instructor	Tofino
Kayla	F	W	30	7	No	No	Surfer	No Fixed Address
Keith	M	W	31	8	No	No	Surfboard Shaper	Vancouver
Lane	M	W	23	12	No	No	Surf Shop Retailer	Victoria
Linda	F	W	27	6	No	No	Surf Instructor	Tofino
Molly	F	W	24	4	No	Yes	Surfer	Victoria
Nicole	F	W	30	7	No	Yes	Surf Instructor	Tofino
Sam	F	W	32	5	No	Yes	Surf Instructor	Ucluelet
Tyler	M	W	30	15	No	Yes	Surfer	Victoria
<i>n</i> = 12	6 M   6F	R=12	AA= 28	SE= 9years	0%	SRC= 7		

## Recruitment

A few different tactics and mediums were used to recruit the specific target groups of this study. Two participants—one male and one female—were recruited through recruitment posters. The posters were dispersed around beaches, surf shops, surf schools and outdoor retailers in Vancouver, Tofino, Ucluelet, Victoria, Sombrio and Port Alberni. Moreover, the use of social media (Facebook and Twitter) and online platforms such as the primary investigator's (Dr. Andrea Bundon) research page were used to recruit participants. Despite this recruitment mechanism, no participants were recruited through this tactic. Five participants—two males and three females— were recruited through conversations in local surf shops, and conversations in the line-up.<sup>5</sup> Lastly, five participants—three males and two females— were recruited through the use of snowball sampling. As Bryman (2015) states, “snowball sampling is a technique in which the researcher initially samples a small group of people relevant to the research questions, and these sampled participants propose other participants who have had the experience or characteristics relevant to the research” (p. 415). Following an interview, I would ask the participant if they knew of anyone that met the criteria and that would be interested in the study. This recruitment tactic proved to be quite successful, as a number of participants were willing to contact other surfers and colleagues encouraging them to take part in the study, thus granting myself further access into the small, tight-knit West Coast surf community. Following the interview, the research

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<sup>5</sup> As Waitt and Warren (2008) note, lulls between sets (of waves) can become a space for conversations and an area where one's social status can be enhanced. Using this time, I would spark informal conversations with surfers. As we grew comfortable enough with each other, I explained my social position as both a surfer and researcher and would inquire about the potential of participating in the study. On one hand, Waitt and Warren point out that surfers tend to be highly skeptical of both 'research' and 'outsiders.' However, on the contrary, oftentimes my identity as a surfer overshadowed my position as a researcher. In addition, as Evers (2009) and Waitt (2008) have pointed out, surfers who fit the gendered orthodoxy of surfing culture (young, white, heterosexual, able-bodied, males) often are able to gain easier access into tight-knit surf groups and communities such as the groups along the West Coast of Canada.



participant was compensated for their time with a stipend of twenty-dollars. The researcher interviewed all the individuals who consented to participate in the study at a time and place that was convenient to them. In the event that an in-person interview was not feasible, a Skype or FaceTime interview was arranged. In total, four interviews were conducted in-person, while the other eight were conducted over Skype and/or FaceTime.

## **Data Collection and Analysis**

### **Interviews.**

Twelve semi-structured interviews were conducted in-person and over computer-mediated communication.<sup>6</sup> As Smith and Sparkes (2016) state, interviews “ [can] create a conversation that invites the participant(s) to tell stories, accounts, reports and/or descriptions about their perspectives, insights, experiences, feelings, emotions and/or behaviours in relation to the research question(s)” (p. 103). Therefore, the use of interviews not only remained historically and methodologically consistent with previous surf studies but were also instrumental in gaining “rich [and] new knowledge” (p. 107) about the social and personal aspects of the participant’s lives. Following the study’s overarching research questions, a semi-structured interview guide was developed to provide appropriate data that would speak to each research question of the study (Appendix V). Most of the questions remained the same across all interview guides/participants; however, as previously described, some questions were modified and added based on the information garnered from the demographic forms. The questions were designed to elicit discussion about the participants’ understandings and attitudes towards SRC and protective headgear in

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<sup>6</sup> As Salmon’s (2015) notes, online interviewing may be chosen because participants are geographically dispersed and or hard to reach. In the case of this study, a number of the participants were located in remote locations on Vancouver Island—six hours away from Vancouver, BC— making it difficult to travel to on short notice. Therefore, the use of computer-mediated communication enabled me the opportunity to speak with a number of participants that I was not able to reach in a timely manner.

Canadian surfing culture; understandings of pain, injury, and risk in surfing; and how and if gender amalgamated and informed one’s understandings and attitudes towards SRC and protective headgear. The interviews were designed for a length of sixty minutes and took place at a time and location that was convenient for the participant. These locations included: surf shops, coffee shops and online (typically from the participant’s house).

Details outlining the interviews format, location and duration are provided in Table 2. The interviews were purposely designed to be informal and flexible, which allowed the researcher to ask unplanned questions as conversations unfolded and curiosity was stirred, thereby generating novel and additional insights (Smith & Sparkes, 2016). Moreover, the flexible and informal structure of the interview guide allowed the researcher the ability to elicit and probe for more depth and detail about questions pertaining to the research topics and enabled the researcher the ability to match particular questions to what each participant knew and was willing to share (Rubin & Rubin, 2005).

Table 2  
*Interview Information*

<b>Name</b>	<b>Interview Format</b>	<b>Interview Location</b>	<b>Interview Duration</b>
Eden	Face-to-Face	Coffee Shop	1:24:54
Evan	Face-to-Face	Coffee Shop	1:24:41
Jimmy	Online (FaceTime)	Online	59:30
Johnny	Online (FaceTime)	Online	1:13:52
Kayla	Online (FaceTime)	Online	50:34
Keith	Face-to-Face	Surf Shop	48:13
Lane	Online (FaceTime)	Online	56:03
Linda	Online (FaceTime)	Online	46:58
Molly	Online (FaceTime)	Online	1:12:02
Nicole	Online (FaceTime)	Online	56:12
Sam	Face-to-Face	Coffee Shop	1:24:41
Tyler	Online (FaceTime)	Online	52:23
			Average 1:04:00

### **Participant observations.**

In addition to interviews, data was collected through participant observations in the form of field notes. As Tjora (2006) states, “interviews and observations are [often] interactive...the interview provides leads for the researcher’s observations, while observations suggest probes for the interview” (p. 430). Following Tjora’s suggestion, the field notes from this study both informed interview questions and were formed by the responses from the participants. Field notes were intended to record information that would enable a better understanding to the overarching research questions, including geographical and spatial information about various surf locations along Canada’s West Coast; how different bodies occupied different surf spaces; documenting the ways that surfers fell into the water; and the different ways that surfers negotiated themselves and their bodies in more “risky” surf situations. Through the use of participant observations, the researcher was able to take notes and provide rich, “thick descriptions” (Geertz, 1973) to complement, support, and expand upon some of the key themes identified in the interviews (Thorpe & Olive, 2016).

In particular, participation observations took place on three separate occasions. The first occasion was a trip to Tofino and Ucluelet in the winter of 2018. During this visit I was able to record observations at a number of different local surf spots along the West Coast including: Cox Bay, Chesterman Beach, Long Beach and Wickaninnish Beach. In addition, I was able to visit and observe a number of local surf shops and surf schools in both Tofino and Ucluelet. The second visit to Vancouver Island involved a trip to Victoria and South Island surf spots in the spring of 2018. During this visit I was able to record observations at a few more isolated beaches including Sombrio and Jordan River and was able to visit a few surf shops located in Victoria. Lastly, a trip was taken to Tofino and area

in the summer of 2018. During this visit, observations were collected more informally while in the water (surfing) and on the beaches. Not only did this allow for more “natural observations” (Thorpe & Olive, 2016, p. 129), but this allowed myself the opportunity to strategically negotiate between my roles as an active participant (surfer) and a researcher in a means of generating rich natural observations (Olive & Thorpe, 2011). While the majority of the field notes were captured in the forms of “jotted notes” and “mental notes;” all of the notes were further articulated, detailed, and reflected upon once the researcher returned home for the evening (Emerson, Fretz & Shaw, 2011).

Guided by the study’s overarching research questions, it was important to capture observations from a number of different surf locations along Canada’s West Coast. However, more importantly, it was crucial to visit these surf locations at different times throughout the year, as the surf and surf conditions change dramatically throughout the year. Noting the significance of the time of year, I was able to make a conscious effort to visit surf spots during three of the four seasons in Canada—winter, spring and summer.<sup>7</sup> Through these efforts, I was able to gain valuable information on the significance of time of year and wave conditions in relation to the study’s research questions.

### **Reflexive journaling.**

Lastly, the study drew upon data that was collected from the researcher’s own reflexive journal notes. The term reflexivity, in this case, referred to the idea that a researcher should be reflective about the “methods, values, biases, and decisions for the knowledge of the social world that they generate” (Bryman, 2015, p. 388). Throughout the study, I was attentive to my own position(s) within the research process and duly noted

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<sup>7</sup> Typically, the surf in Canada gets “heavier” and larger in the winter and fall—sometimes reaching wave size of head-high and taller—due to winter storms, whereas the surf in the summer and spring tend to be much smaller and more consistent—typically ranging from waist to neck high (Shilling, 2003).

these instances by constructing reflexive field notes, and journaling my own thoughts following interviews, participant observations, and surf sessions. Through the use of a reflexive research journal, I was able to critically reflect upon my own subjectivities and social positions and was able to unpack and decipher *how* my own positionality may have informed various stages of the research process (Thorpe & Olive, 2016). This reflexive process allowed me to ask lingering questions about my own personal baggage and how it affected my own understandings of the social world and enabled me the opportunity to ask the research participants to reflect upon their own identities within specific social contexts and the social world (Palmer, 2016). The journaling offered itself as a unique tool to help support and expand upon some of the data derived from the interviews and participant observations during the data analysis phase (Smith & Sparkes, 2016).

### **Data Analysis**

A data analysis strategy was developed. This involved transcribing both the field notes and digital recordings from the interviews verbatim. Following the transcription of the collected data, a thematic analysis was conducted. As Braun, Clarke and Weate (2016) state, thematic analysis “offers a method for identifying patterns (“themes”) in a dataset, and for describing and interpreting the meaning and importance of those” (p. 191). Noting this, Braun et al.’s six-phase thematic analysis model was adopted to better analyze and conceptualize the data. This iterative process involved moving backwards and forwards throughout the data in ways that intersected the study’s “theoretical assumptions, disciplinary knowledge, research skills and experience, [with] the content of the data [itself]” (p. 196). In total, the transcriptions were reviewed and coded twice, as a way of capturing consistencies and accuracies across all transcriptions. Once this was complete, the codes were organized into several overarching themes. Through the implementation of

thematic analysis and the use of Braun and company's six-phase model, I was able to code data and create themes and subthemes that generated insightful understandings that supported and answered the study's overarching research questions.

### **Ethical Considerations**

For this research, this study received ethics approval on November 28<sup>th</sup>, 2017 from the University of British Columbia Behavioural Research Ethics Board (Appendix VI). The research posed minimal potential risks to the participants of the study. The interviews took place in comfortable settings and were chosen based on the participant's recommendation. By giving the participant the ability to choose *where* the interview took place, it was hoped that any unwanted anxieties and discomforts that the participant had would be alleviated (Hurd Clarke, 2003). Before the interviews were conducted, informed consent was obtained from the participants. The process of informed consent notified the research participants the aims of the study, the methods being employed, how the data would be presented, and overviewed potential risks and benefits of the study (Palmer, 2016). In addition, the participants' rights were reviewed prior to the interview. This included reiterating that the participant had the option to refuse to answer any particular question throughout the interview, and that they could withdrawal from the interview and study at any time without question and/or penalty. Access to the data was restricted to the researcher (Nikolaus Dean) and graduate supervisor (Dr. Andrea Bundon). Together we reviewed our responsibilities for confidentiality and data storage and identified a locking file cabinet, encrypted computer system, and laboratory procedures for insuring confidentiality. Due to the sensitive nature of some of the topics discussed throughout the interviews, strict confidentiality of the participants was maintained throughout the research process and the findings were summarized anonymously using pseudonyms. As Bryman and Bell (2016)

state, “pseudonyms are typically used to protect people’s identities” (p. 56). Through the implementation of pseudonyms, the researchers were able to protect the identities and personal information of the participants.

Lastly, it is important to acknowledge that throughout the research process, I was worked from a virtue ethics position. This ethical position allowed me to emphasize ethical behaviours and ethical decisions over and above the pragmatics of research (Palmer, 2016). This approach favoured the agency and well-being of the researcher over the research process and encouraged me to conduct myself with “courage, honesty, resoluteness and humility” (Blee & Currier, 2011, p. 403). Through the adoption of this ethical position, I was able to continually reflect upon my own values, beliefs, social position(s), and ideological positions as I navigated and moved throughout the research process (Palmer, 2016). Through this on-going reflective process, I was able to draw attention my own moral compass, and ethical understandings when interacting with the research participants—especially when dealing with the complex topic of SRC and the lived experience of the injury (Lahman, Medoza, Rodriguez & Schwartz, 2011).

### **Insider Status and Reflections**

Before starting this study, I had surfed for just over six years. Over that time, I had the privilege and opportunity to surf and immerse myself in a number of different surf cultures around the world including surf cultures in Canada, The United States of America, Mexico, and Portugal to name a few. It was over this time that I not only gained valuable experiences on *how* to surf (Evers, 2006), but also gained valuable insider-knowledge and understandings about surfing and its encompassing subculture. These experiences, combined with my own positionality as a young, white-skinned, able-bodied, male placed me at the top of what many surf scholars have termed, “the surfing hierarchy” (Booth,

2001a; Evers, 2004; Ford & Brown, 2006; Waitt & Warren, 2008). This identity and positionality gave me access into the smaller West Coast surfing subculture and allowed me to connect and recruit other surfers more easily.

Since moving to the West Coast of Canada, I have been able to immerse myself in the growing surf culture and have been involved with a few different surf-related programs and clubs, here on the West Coast. For example, since moving to Vancouver, I have been a volunteer and member of the *Surfrider Foundation Vancouver*—a not-for-profit organization full of dedicated surfers and environmentalists who protect and clean-up Canada's Southern Pacific coastlines. In addition to this, I am also a club member with the University of British Columbia's Surf Club and have been a member of the Vancouver surf community—attending's local events, get-togethers, beach cleans ups, and partaking in various conversations of different capacities. These experiences provided me with valuable (insider) information about Canada's West Coast surfing culture, and also yielded me the opportunity to make a number of connections and relationships with key figures in Canada's tight-knit surfing culture (Thorpe & Olive, 2016). This hybridized identity (as both a surfer and a researcher) was key to carrying out this research and exemplified the fact that it was important to be a surfer (who knew how to surf) when conducting surf-based studies (see Evers, 2006; Leonard, 2007; Olive et al., 2015; Olive & Thorpe, 2011; Stranger, 1999; Thorpe & Olive, 2016). Below I highlight some of the benefits that transpired from “cultural insider” perspective (Evers, 2006; Wheaton, 2002) throughout the research process, and discuss and reflect upon some of the difficulties, and complexities that I also faced as a cultural insider throughout this study.

Not only did my identity as a surfer present and enable me the opportunities to build rapport with participants and other surfers (both on and off of the water) but I was able to



use my surfing identity to recruit and garner research participants from across the West Coast. For example, I was able to recruit two participants through conversations in the line-up (on the water), and three participants through conversations at local surf shops. Below, is an excerpt from my reflexive field notes, which highlighted the recruitment of the surfers in the line-up:

*February 10<sup>th</sup>, 2018*

Today was great, both on the water (surfing) and also great for recruiting participants. Today, I was able to recruit two experienced surfers—a male and a female, both in their mid-to-late twenties in the line-up at Chesterman beach. We had been surfing, conversing, and waiting through lulls in the surf together for about thirty minutes, until finally our conversations lead to me disclosing my research project. In general, the surfers were quite interested in the study, and wanted to learn more about concussion in surfing, so they agreed to participate. Reflecting upon conversations had with the participants, I cannot help but think that my own appearance, surf skills and knowledge of the sport may have helped recruit these two surfers.

This passage pointed out the significance of my identities throughout the research process. As Waitt and Warren (2008) note, surfers can be highly sceptical of researchers and outsiders, and often give respect and time to those who can demonstrate thorough surfing abilities. Following Waitt and Warren's idea, it could be speculated that my ability to surf may have granted me access to hang with the surfers, and equally made it easier for me to connect with surfers in the line-up.

As mentioned, I have been fortunate enough to travel and surf around the world. Through these travels, I have been able to make a number of connections and relationships with other surfers. Interestingly, one of these previous relationships proved to be very valuable to the research process and to the recruitment of other participants. My friend, Molly had been living and surfing on the West Coast for a few years at the time of the

study. Over that time, she had built-up a number of relationships with key figures in the Canadian surf scene. Noting Molly's active participation within the West Coast surf community, I decided to reach out to her about participating in the study. She agreed to participate in the study and an interview date was selected. Before the interview took place, I took some time to write about and reflect upon our relationship and some of my concerns going into the interview.

*January 28<sup>th</sup>, 2018 (Before Interview)*

The previous interviews have been conducted with complete strangers, so it will be interesting to see how this interview will work, what the tone will be and how the interview will flow. I have never interviewed a friend, so this is new to me. It will be interesting to see *how* I react and respond to my friend's responses. In particular, it will be interesting to see how and if I challenge my friend with any questions or comments that she may make. I can only imagine that it would be awkward or stilted in a sense. I am nervous for this interview for a couple reasons: 1) I am afraid to challenge and critique some of my friend's answers/views; 2) I hope that the conversation is not robotic and fabricated; 3) I hope this interview won't change our current friendship and hope that this doesn't make anything awkward between us.

Interestingly, all of these preconceived anxieties were extinguished within the first few minutes of our interview. Not only were we able to re-connect as friends, but we were also able to address all of the interview questions. Moreover, as noted in my reflection below, Molly was able to connect me with a number of other surfers from the (even smaller) South Island surf community.

*February 23<sup>rd</sup>, 2018 (Following Interview)*

One thing that was very apparent, [reflecting upon the interview] was the fact that [Molly] was very much a gatekeeper to the South Island surf community, as following the interview, I had three people message me to find out more information about the study and how to get involved. By (re)forging our

friendship and building rapport through conversations, I was able to gain further access into the South Island surf community through an old friend.

As discussed, Molly, not only acted as a participant within the study, but also acted as a gatekeeper to other participants in the tight-knit South Island surf community. Molly's assistance, she was able to connect me with three surfers who eventually partook in the study. As Bryman (2015) pointed out, the use of friends can help a researcher gain access to other participants that would otherwise be unreachable. Following Bryman's words, I was able to use my connections, and previous friendships within the Canadian surf culture as a way of gaining access to research participants from the West Coast.

While the majority of the participants were quite open and candid about their experiences surfing on the West Coast of Canada, I had one participant that was quite sceptical of participating in the study, due to the fact that they did not want to give away *too* much information (geographically) about their local surf spots. Now, on one hand, the participant's hesitation to participate in the study could have been bound to the fact that surfers have been known to be quite resistive to researchers and outsiders (Waitt & Warren, 2008); however, on the other hand, the participant's hesitation to participate could have been, and I suspect, grounded in ideas of localism and wave secrecy. The surf secrecy that is understood by an un-written surfer code that restrains local surfers from disclosing local, uncharted, and sacred breaks to outsiders and non-locals, like myself (Daskalos, 2007). I believe that in this case, the surfer's hesitation to participate in the study was based on the latter idea, and the belief that a non-local surfer (myself) was trying to sift-out and gain pertinent geographical and spatial information that would reveal *where* the particular prized-breaks were located along the West coast. Revealing these details would not only disrupt the surfer's code, but it could also jeopardize the participant's own status within the

tight-knit surf community. Noting the participant's vacillations, I simply told the participant that the geographical logistics did not need to be disclosed and/or expanded upon when asked questions about surf locations along the West Coast. Not only did this, brief, yet important conversation give the participant an ease-of-mind, but the tone of the conversation shifted (for the better) and led to the participant opening-up that much more.

Recognizing that I was in fact, an outsider rather than an insider in this situation was key to gaining the participant's trust and carrying out this particular interview. By momentarily dissecting my blurred identity as a surfer and researcher, I actively and strategically played-up my role as a researcher and downplayed my role as a surfer to show the participant *what* my motives and intentions were with the research in hopes of alleviating any of their preconceived ideas. This particular interaction not only spoke to the "messiness" (Denzin, 1997) of research, but also spoke to the fluid and dynamic nature of qualitative research, and how researcher's identities are always being challenged, shifted, shaped by and throughout the research process.

Throughout the interview process, it became clear that the participants had different experiences and understandings of SRC in surfing. In particular, the participants were asked to share and speak to some of their "lived experiences" with the injury (Ellis, 2009). These lived experiences were articulated and shared in different capacities, where some participants were quite open about their experiences with SRC, while others were more sensitive and closed-off in their responses. This could have been linked to the fact that concussion is still a stigmatized and taboo topic within sporting subcultures (King et al., 2014). However, it could have also been linked to the fact that many of the participants did not know *what* a concussion was and equally how to manage and/or treat the injury. This confusion toppled by the fact that many of the participants in the study had experienced a

SRC led to a number of participants asking me (tough) SRC questions throughout the interview process in search of answers and explanations. In short, the participants were quite *hungry* and at times desperate for answers and explanations. This did not go unnoticed and was something that I, “the concussion expert” had to constantly deal with and negotiate throughout the research process. I was continually torn on *how* to respond to the participants when quizzed and asked about SRC, as on one hand, I wanted to provide them with *the* answers, so that they could better understand the injury and its complexities; however, on the other hand, by answering the participants’ questions, I would have fundamentally compromised the project’s intentions and my overall research questions. In these instances, I had to negotiate between my role as a surfer and my role as a researcher (often choosing the latter) to explain to the participants that I was interested in *their understandings*, at the moment, but would be happy to share some knowledge about SRC after the interview was complete. The participants were quite receptive to this compromise and acknowledged my roles and capacities within the research process.

Throughout the research process, I was able to connect with a number of participants, each coming into the interviews with their own backgrounds, experiences, knowledge, and social baggage. And, while, for the most part, the participants were quite respectful and open when discussing (sometimes challenging) topics with me; there were a few instances where the male participants in the study expressed overtly sexist comments about female surfers. As other surf-scholars have pointed out, surf culture is rife with sexist attitudes and behaviours that are typically directed at female surfers from men-who-surf (see Evers, 2004; Olive et al., 2015; Waitt & Warren, 2008; Waitt, 2008). These comments were troubling and quite difficult for me to respond to as a surfer and also as a researcher. On one hand, I wanted to call out the participants for their sexist comments and

fundamental understandings of gender; however, on the other hand, I did not want to jeopardize my relationship (and rapport) with the participants and did not want to endanger the participant's willingness to continue participating in the study. Ultimately, I (reluctantly, yet strategically) decided to pursue the latter option, as I did not want to risk the interview and or the rapport built with the participants. This was a very difficult and complex decision to make, especially on the spot and in the moment, and is something that still haunts and troubles me today. Below is a small reflexive passage that highlights my regrets of not acting upon the sexist comments that transpired from an earlier interview.

*February 2018*

I don't feel like I did *enough* to interject and/or challenge some of the participant's sexist views in today's interview. I mean, as a sociologist, isn't that my job to call out bullshit like that? By remaining silent do I, too, reproduce and condone the participant's sexist attitudes and behaviours? I guess I keep justifying my decision to remain silent by the idea that I 'did it for the research.' I am conflicted with my own silence and don't know what I could-have/should-have done.

As the reader can see from the above passage, I was quite conflicted on *how* to react to the participant's sexist comments. My blurred identities as a surfer and researcher had reached a new crossroad in the research process. A crossroad of uncertainty and silent ambiguity, a crossroad that still haunts me today. This ugliness within the research process illustrated the significance and complexity of a blurred identity when doing research and pointed to how multiple roles and perspectives can not only shape the research process but can also convolute and complicate the process as well (De Andrade, 2000).

Finally, one of the most glaring points for me that surfaced throughout the research process was the fact that qualitative research is a very messy process and learned very quickly that you must embrace the messiness in order to carryout and conduct rigorous and

comprehensive qualitative research. For example, I came into this project adopting a deductive approach to my research, whereby my theories—Lyng’s (1990) edgework theory and Laurendeau’s (2008) gendered risk regimes— guided my analysis and grounded my hypothesis. However, after initial observations and interviews, I found myself interested in different areas of inquiry and research questions, and subsequently adopted more of an inductive approach to my research. Noting this, I elected to adopt a hybridized approach to my research which eventually shifted my use of theory and influenced how the data was analyzed and interpreted, as I realized that what I was studying was not necessarily an edgework-oriented study but was rather a study grounded and layered in gendered understandings of pain, injury, and risk, and therefore required a feminist perspective to make sense of the data. Although I knew that conducting research could be a messy process, I never realized *how* messy qualitative research truly was until it came time to reflect upon some of the decisions and negotiations that I made throughout the research process and more importantly how these decisions impacted my interactions, theories used, questions asked, and how the data was analyzed. However, by embracing the messiness of research, I believe that I was able to better situate myself as a researcher and as a student learning the ins-and-outs of *doing* qualitative ethnographic research.

## Chapter IV: Results

### Chapter Overview

In the following chapter I outline the themes that were constructed and identified throughout the data analysis. The results are organized into three separate, yet interrelated sections. First, I contextualize the West Coast surf culture and provide details about the localized surf scene and the surfers that inhabited its waters. Second, I discuss and analyze the findings that speak to the research question: *What are surfers' understandings and attitudes towards SRC?* And, third, I examine and discuss the research question: *What are surfers' perceptions and attitudes towards protective headgear in surfing?*

### The Surf Scene in British Columbia and Canada's West Coast

During data collection, I used interviews, field notes, and personal reflections as a way to document Canada's West Coast surf scene as I personally encountered it. The following excerpt from my field notes helps to illustrate and situate the Canadian West Coast surf scene and the subject of study.

*February 10<sup>th</sup>, 2018*

The air is crisp, and the skies are graying on this long-weekend in Tofino. Cox Bay, one of Tofino's more open, and populated surf spots is no exception on a day like today. Despite heavy rain in the forecast, pods of surfers' flock to the beach to try to catch a few waves produced by a recent winter swell. Thanks to this swell the waves are much larger than they usually are, ranging from shoulder to head-high. While the waves remain choppy, inconsistent, and unpredictable, the surfers on the beach and in the water remain calm, cool, and collected. They are all covered head-to-toe in thick, black, neoprene wetsuits protecting them from the frigid temperatures of the Pacific Ocean. Some surfers are riding longboards, some are riding stand-up paddleboards, but the majority of surfers are riding shortboards. A number of surf schools inhabit the waters today, capitalizing on tourists coming from Vancouver and Victoria for the long-weekend. These groups are only a few amongst the hundreds of other surfers that take to the waters today. While these beginners' surf the whitewash, and the shallow parts of the beach, more advanced surfers congregate to the right side of the water to catch one of the more prominent point breaks around Tofino. These surfers are riding shortboards, and only



taking waves that they know they can catch. This area appears to be overridden by middle-aged, male, short-board surfers today, with the odd female, or groups of women appearing sporadically across the line-up, producing a ratio of about of about four males to every one female.

The uniqueness of this particular setting not only enabled me the opportunity to further elaborate and probe at some of these observations throughout the interview process, but also allowed me, as a surfer, the opportunity to immerse myself into some of these unique surf spaces to further explore the layered dynamics of Canada's West Coast surfing culture. Several of these characteristics will now be further expanded upon in order to effectively illustrate and localize Canada's West Coast surf culture.

### **Situating Canada's West Coast surf culture.**

The aura around the West Coast of Canada presented a similar laid-back, nonchalant surfing milieu similar to that of Southern California, Australia, and/or Mexico. However, what really differentiated this surf scene from these other tropical surf utopias was the geographical uniqueness of Canada's West Coast. This four-season surf destination not only requires one to dip into the fringed Pacific North West waters to surf (5 to 11 degrees Celsius) but also requires one to have a heightened sense of adventure and level-headedness to seek-out and surf larger, riskier, and more remote surf breaks along Canada's Western Coastline.

The winters are often cold, gloomy, and almost always overcast, yet simultaneously it often produces the biggest swells, and best surf conditions of the year due to winter storms. In fact, according to the participants of the study, almost all of them indicated that they preferred winter surfing over all other surf seasons and noted that they favoured the winter conditions over the warmer summer conditions— due to the consistency of waves, and the production of larger waves. While the winter may produce more flavourful waves

for surfers in Canada, the magnitude of both the swell, and the wave size (head-high) created risky surf and risky surf spots for surfers of all skill levels to negotiate. Though risks, and ideas of risk, are relative and socially constructed ideas based on one's own positionality (Lupton, 1999), the surfers from the study unanimously agreed that that winter surfing in Canada was riskier than surfing in other seasons on the West Coast due to the heavier conditions. In addition to the significance of the surf season, a number of surfers pointed out other risks inherent to Canada's West Coast surf scene. These risks included "busy breaks" (Keith) which heightened the risk of getting hit by another surfer or by a surf board; the risk of hitting protruding "rocks" or "hitting the bottom," (Eden); and the unpredictability of "rip-currents" (Sam). While most of these risks are also inherent in other surf locations around the world, one of the distinguishing risks unique to the West Coast of Canada is the fact that a number of logs inhabit the Pacific North West oceans due to the logging industry up and along on the West Coast. As Lane spoke to this additional risk in his response:

**Lane:** A lot of times we surf like after a storm and what not, and our logging industry is pretty predominant here [On the West Coast of Canada]. We get a lot of logs in the water, so I think sometimes when I am surfing I'll see a massive log, and I'll be like, 'Wow, like if that hit me, I could definitely die or get a pretty severe concussion.'

Through Lane's articulation we can see how logs added a new and heightened risk for surfers along the West Coast of Canada. Furthermore, a number of surfers pointed out that one of the unique aspects, but also risky features of Canada's West Coast was the remoteness of surf spots along the coastline. The participants noted that much of Canada's West coast remained undiscovered and un-explored (especially North Island), and noted that a number of remote surf spots required surfers to hike-in or boat-in. As the participants discussed, on one hand, the remoteness of the West Coast presented the opportunity to surf

untouched waves (something that many surfers longed-for and desired); however, on the other hand, a number of participants noted that the remoteness of a surf spot could add additional risk, uncertainty, and concern *if* someone were to get injured. Sam discussed the heightened risk of remote surf locations in her response:

**Sam:** I think the more remote, usually the more gnarly generally. It's definitely more risky, and there are just more X-factors you don't surf there every day so you don't know. You don't know if it could be high tide and it could be going down and you don't know where the rocks are. You know? If you haven't watched the high and low tide changes, you don't know.

The remoteness of a surf spot not only added risks because of one's unfamiliarity of the spot, but also heightened the risk due to the lack of proximal medical services, and difficulties for medical services to access these locations. As Stranger (2011) stated, unlike mainstream sports, where trainers and/or medical staff are readily available to treat injuries, surfing often takes place within spaces and locations that lack these significant medical figures and "can be totally alone and/or long distances—even days—from medical assistance" (p. 96). Through Stranger's words we can begin to see just how the remoteness of surf locations can become troublesome and risky.

### **Canadian West Coast surfers: who was in the water.**

Just as important as the geographical uniqueness of Canada's West Coast surf scene were the bodies that inhabited the waters along the West Coast. Surfers along Canada's West Coast range in age, ranging from children to older adults, with the majority of surfers falling somewhere between age 20 and 35 (Shilling, 2003). In addition to various ages, the West Coast waters host surfers of all skill levels from beginners (just starting) to more experienced surfers surfing in the back (larger waves). My field notes captured how a surfer's experience also determined *where* they surfed on the water and how they surfed.

*February 2018, Cox Bay*

The waves are breaking much bigger today, ranging from three feet to head-high waves. The beginners are exclusively surfing in the white wash, while the more advanced surfers are ‘in the back’ surfing the much higher point breaks. In the very back there are about twenty surfers (all appear to be experienced surfers who are catching some really big waves 5 feet or higher).

Through this illustration, I highlighted how one’s experience often determined *where* they surfed, and what size of waves they surfed. In addition to one’s experience level, one’s gender also seemed to determine *where* one surfed. During participant observations, I noted that the average male to female ratio at any given surf location was approximately 4:1. Typically surfers surfing the larger waves (head-high) were male surfers, where I found that female surfers were more likely to surf middle-sized waves (waist to shoulder high-waves). Johnny confirmed these observations and pointed out the gendering of surf spaces and along the West Coast of Canada:

**Johnny:** From my experience males typically want to surf bigger waves, you know, is the kinda perception that the...an impressive thing for a guy to do is to surf a really big wave or a more dangerous wave in the way that I think that amongst female surfers it’s less valued. You know? If I could hear sorta the female perspectives on waves, I hear—the girls that I surf with look at a gnarly wave and go, ‘Oh I don’t want anything to do with that’ like, ‘That’s not what I am interested in surfing, I wanna surf this nice kinda more mellow wave’ and then I hear more guys saying like, ‘Oh man, that looks gnarly, I wanna surf that, where is that wave?’

Johnny’s illustration highlighted some of the gendered understandings that were upheld and subsequently translated to the waters along Canada’s West Coast. Although my observations supported Johnny’s response, a number of female participants also countered this point, as I noted that a number of females could be seen surfing larger (head-high) waves on a daily basis. These contradictory points made it difficult to determine exactly how significant one’s gender was in relation to where they surfed (especially considering I only spoke to experienced surfers) but nonetheless pointed out that one’s gender may have influenced where the surfer surfed.

## **RQ#1: Surfers' Understandings and Attitudes towards SRC**

In order to answer the overarching research question: *What are surfers' understandings and attitudes towards SRC*; four key sections were identified—each with their own distinctive set of themes and sub-themes. These sections were identified as follows: 1) Surfers' framings of concussion, which included five themes; 2) Surfers' diagnosis and management of SRC, which included three themes; 3) Surfers' return-to-surf decisions, which included three themes; and 4) Concussion safety and education in surfing culture, which included three themes. In addition to these developments, it was also key to gain information and understandings about the participants' lived experiences of SRC in surfing as well. This information is articulated first to better situate the research question as well as the sample.

### **Participants' lived experiences of SRC.**

Out of the sample, over half of the participants had sustained one or more surf-related concussions ( $n = 4M \text{ \& } 3F$ ). The most common mechanisms for sustaining SRC in this sample was by the force of water or contact with the water's surface ( $n=3$ ); contact with one's own surfboard ( $n=2$ ); colliding with other surfers ( $n=2$ ); contact with the bottom ( $n=1$ ); and contact with one's own body ( $n=1$ ). These statistics aligned with what previous research had found, in that contact with surfboards, the ocean floor, other surfers, and wave force were documented as the leading causes of surf-related injury (Taylor et al., 2005, 2004; Woodacre et al., 2015). Table 3. provides a detailed account of the various ways that participants sustained a SRC while surfing.

Table 3  
*Mechanism for SRC in Study Sample*

<b>Participant</b>	<b>Water Force</b>	<b>Contact with other Surfers</b>	<b>Hit board</b>	<b>Hit bottom</b>	<b>Contact with own body</b>
Evan	1				
Jimmy				1	
Johnny					1
Molly	1	1	1		
Nicole			1		
Sam	1				
Tyler		1			
<b>Total</b>	3	2	2	1	1

Common symptoms noted by the participants included symptoms of fuzziness, blurred vision, fogginess, heavy-headedness, disoriented, confused, and one participant even compared their symptoms to heat stroke. In addition to these symptoms, the seven participants who did sustain a SRC disclosed that they had all self-diagnosed their own concussions, and admitted to returning-to-surf either immediately after, or later that day. This finding aligned with what previous literature suggested as Furness, Hing, Walsh, Abbot, Sheppard and Climstein (2015) found in their study that only one-third of surfers actually sought out medical attention following a surf-related injury.

In addition to the participants experiences with SRC, they were invited to discuss their wider injury profiles, and other surf-related injuries sustained in order to better contextualize the frames of reference within which surfers defined, understood, and managed their SRCs. Interestingly, over half of the surfers noted that they had sustained a SRC in other sporting settings included snowboarding, skiing, and skateboarding. In addition to these disclosures, it appeared that this sample (though quite small) had experienced quite a range of other surf-related injuries including: broken facial bones, broken ankles and wrists, two broken backs, separated shoulders, various knee injuries, sprains and muscle strains and large lacerations and scrapes. Similar to Liston et al.'s (2018) findings, the surfers' discussion of their wider injury profiles addressed and clearly

distinguished a functionalist view of injury, whereby time loss from play was the key criteria used to classify the severity of the injury. Through these discussions it became clear that surfers upheld functionalist interpretations of injury whereby the severity of one's injury was based on the time lost from sport *and* on the visibility of the injury. Expanding upon Liston et al.'s (2018) original theorizations, this study found that the visibility of the injury was also significant in classifying the severity of the injury, and ultimately underlined and supported the surfers' functionalist understandings of injury.

Notably, more males had sustained a SRC than females in this sample. These numbers differed from what previous concussion research had suggested, in that previous studies had suggested that females tended to experience SRC more frequently than males, and often experienced more severe symptoms and prolonged recovery periods (King et al., 2014). While male surfers experienced more SRC's than female surfers in this particular sample, this study was not set up to prove the accuracy of these previous claims. In addition, the study found that the severity, symptoms, and longevity of the surfers' SRCs appeared to be similar between the male and female surfers from the study. Despite these differing findings, the findings from this study determined that male surfers were more likely to sustain a severe surf-related injury than female surfers were. For example, the males from the study had disclosed, in their wider-injury profiles, that they had sustained more severe injuries such as broken backs and other broken bones, concussion, and severe facial damage. This finding aligned with what previous surf-related injury studies suggested in that young male surfers were often more likely than female surfers to experience significant surf-related injuries (Nathanson et al., 2007, 2002; Steinman, 2009; Taylor et al., 2005, 2004; Ulkestad & Drogset, 2016).

Finally, although the numbers from this study suggest that concussion rates in surfing appeared to be rising, these numbers actually need to be unpacked before moving forward. Previous surf-injury research had suggested that concussion rates make up somewhere between 3 to 37.1% of all surf-related injuries (Klick et al., 2016; Nathanson et al., 2007, 2002; Swinney, 2015; Taylor et al., 2005; Taylor et al., 2004; Ulkestad & Drogset, 2016; Woodacre et al., 2015). This rather large spread in the occurrence of SRC in surfing became even more staggered and skewed when this study found that over half of the participants had sustained a SRC while surfing. However, this number needs to be deciphered, as these numbers may *not accurately* reflect the frequency of SRC in surfing, as the nature of research topic may have only attracted surfers who had already previously experienced a SRC. In addition, due to the smaller sample size of this study ( $n=12$ ), it should not be inferred that SRC is experienced by over half of the 23 million surfers worldwide. However, what these numbers may suggest, and more accurately represent, is the fact that there appears to be a growing cultural awareness, and knowledge of SRC in Canadian surf culture. Though it is difficult to provide a direct linkage between the two, these findings, on a larger scale, may reflect similar notions to what both Anderson and Kian (2011), and McGannon et al. (2013) found, in that there appeared to be a growing cultural awareness of SRC in more traditional sporting cultures like hockey and football. Echoing these findings, this study pointed to the fact that growing cultural awareness of SRC may not only be occurring in more traditional sporting cultures but may also be transcending across sporting cultures into more non-traditional, non-contact, individualized sports like surfing.



## **Surfers' framings of SRC.**

In total, five themes were established when exploring how surfers' framed SRC in Canadian West Coast surf culture. These included SRC being framed as 1) not a serious injury in surfing; 2) not as serious as other surf-related injuries; 3) a more serious in other sports; 4) an injury that only happens to at-risk surf populations; 5) and was framed as an invisible injury. Details of each theme are discussed below followed by a summary.

### ***SRC: not a serious injury in surfing.***

All participants, to one extent or another displayed irreverent attitudes towards SRC in surfing by trivializing, mocking, and/or downplaying the idea of and the severity of the injury in surfing. Sam and Nicole, female surf instructors displayed irreverent attitudes towards the injury and framed SRC as *not a serious injury in surfing*:

**Sam:** ...like I hit my head so hard that I came up and I was like, 'Oh man, I thought I just got rattled or whatever' not like, 'Oh a concussion' it's never even phased me. It was just like a headache and kinda feeling a bit disoriented, but I just paddled back out normally.

**Nicole:** I mean, I've definitely hit my head a few times, but I've never went to the hospital or anything. I usually keep surfing, so it can't be that bad, I wasn't throwing up or anything.

In addition, a number of surfers often downplayed concussion in surfing by suggesting that although they had hit their head, they did not hit their head *hard enough* for a SRC. The following passages highlighted this downplaying of SRC:

**Lane:** Umm, I mean if you're surfing, there's like one spot in particular around here that has a pretty shallow sorta section...if you somehow got super unlucky and ended up head-first on the reef I could see it happening, but most of my experiences and others' experiences—you hit the reef like not quite hard enough for a concussion.

**Molly:** ...like if you brush the bottom, it's not a big deal, even if you hit your head [on] the bottom, you can still kinda like wiggle your brain a little bit but you're not—it's not like a crank.

These framings of SRC highlighted the irreverent attitudes that surfers often held towards SRC in Canada's West Coast surfing subculture. Through this framing of SRC, the surfers from the study (both male and female) not only denied the severity of SRC within the surfing subculture, but also downplayed, trivialized, and normalized the injury as a way to keep surfing. By accepting these risks, and by surfing with and through SRC, the surfers illustrated that surfing exists within a *culture of risk* (Nixon, 1992). A sporting subculture that normalized and encouraged surfer to play through pain and injury even at the risk of exacerbating one's injury, and further damaging one's health (Liston et al., 2018; Nixon, 1992; Roderick & Waddington, 2000; Young 1993). This finding illustrated that this cultural pattern did not only confine itself to more traditional sporting cultures (which previous studies have only explored), but also illustrated that this cultural pattern can also transcend into more non-traditional sporting cultures as well, such as surfing.

***SRC: not as serious as other surf-related injuries.***

Male and female participants in the study commonly framed SRC in surfing as something that was *not as serious as other surf-related injuries*. These framings were often coupled with irreverent comments and attitudes towards SRC in surfing, which reiterated the denial and downplaying of SRC in surfing. One way that the participants would downplay the injury was by placing SRC into, what I theorized as an *injury hierarchy* (with other surf-related injuries). This injury hierarchy was often topped by (more visible) injuries like spinal injuries, broken bones, and lacerations, while SRC was typically placed at the bottom of the hierarchy and was compared to (less visible) injuries like sprains, muscle spasms, and heatstroke. Eden and Johnny both expressed this hierarchal organization of surf-related injuries in their answers:

**Eden:** Head injury specifically? I dunno if that should be like the new focus of surfers. There needs to be awareness of your ankles and your wrists, your arms, you know? All these other body parts too—taking care of your muscles before and after.

**Johnny:** Umm you know, I guess the hard thing is, you know, how do you rank [concussion] in terms of numerous injuries that could be caused in surfing, right? Well, yes it can cause concussion, but it can also cause spinal injury.

These responses indicated that while surfers were aware of SRC in surfing, they were not *that* concerned with the injury and often denied its significance when compare too more “serious” (visible) injuries. This finding again, highlighted that surfers appeared to hold onto functionalist understandings and interpretations of injury, whereby the actual visibility of the injury dictated the severity of the injury. These functionalist understandings and interpretations of injury not only underpinned the irreverent attitudes held by the surfers, but ultimately led surfers to conceal and deny SRC as a way of showing one’s commitment to the sport and sporting subculture (Liston et al., 2018) athletes. Moreover, these findings aligned with what Taylor et al. (2005) found, in that only a small percent of surfers actually had associated surfing as a sport with high-risks of head injury.

***SRC: an injury that is more serious in other sports.***

Nearly all of the surfers in the study framed concussion as an injury *that was more serious in other sports*. Through this framing, participants pointed out, and emphasized that athletes participating in hockey, rugby, football, and even more “non-traditional” sports like skiing, snowboarding, and mountain climbing should be the ones concerned about SRC, not surfers. Keith and Sam highlighted this particular framing of SRC:

**Keith:** I feel like if we were talking about a different sport like skiing or mountain climbing or something like that, those are much different because you’re actually like—I mean don’t get me wrong—surfing definitely puts you in harm’s way, but like luckily there’s a lot more forgiveness to falling in water or to be like learning how to surf and stuff like that, and watching out for other

people, compared to actually like, you know, people attempting jumps, or rails or climbing up rock faces that they might fall off and their partners may not give them enough slack or like you know, just those types of things, or like you know like aggressive sports and stuff like that too.

**Sam:** I wouldn't think so cause there is not a lot of impact with—you know you're not like, with football you're hitting each other, whereas [surfing] you're trying to avoid each other if anything.

These responses did have some merit and aligned with what previous surf-related injury studies have suggested, in that surfing is, when compared to other sports, a relatively safe sport. For example, Taylor et al. (2004) found that 1.1 injuries occurred for every 1000 hours spent surfing and pointed out that this number was considerably less than the overall rate (16.1 injuries/ 1000 hours) reported from a range of other sports including hockey, football, soccer, and basketball. In fact, Taylor et al.'s (2005) follow up study found similar findings, indicating that surfers “were more likely to believe that there was a higher risk of head injury in other sports and physical activities” (p. 76). While these responses did have some merit to them, these responses also illustrated surfers' irreverent attitudes towards SRC in surfing and demonstrated how surfers would often use other sports (and their inherently risky environments) as a scapegoat to deny the severity and significance of SRC in surfing. This particular framing of SRC by surfers not only illustrated their denial of SRC in surfing, but also insinuated that there seemed to be a widely held belief that SRC did not occur in surfing due to the fact that the sport was perceived as a non-risk laden sport when compared to other sporting context. These perceptions of both SRC and risk of injury remained the same across the sample, and further supported the idea that both male and females perceived and interpreted injury in similar ways (Charlesworth & Young, 2004; Hunt, 1995; Pike, 2004; Pike & Maguire, 2003; Safi, 2003; Young & White, 1995).

***SRC: only happens to at-risk surf populations.***

Overwhelmingly, the participants of the study framed SRC as an *injury that was more apparent in at-risk surf populations*. For example, the majority of the surfers stated that beginners were the most at-risk population for sustaining a SRC, while over half of the participants also argued that advanced, big wave surfers, or surfers “defying the limits” of surfing would also be an at-risk population for SRC in surfing. Jimmy noted these two at-risk populations for SRC within his response:

**Jimmy:** Umm, I would say there’s sorta two demographics. There’s the big wave people who are putting themselves in really extreme scenarios, and I guess well, not just big wave, but people who are pushing the limits surfing whether that’s big waves, or airs or umm surfing on crazy shallow reef break, that sorta stuff, and then also beginners who also don’t know where to position themselves or how to fall or board control, getting in the way of people.

Though participants of the study were quick to point out these two particular at-risk surf populations, it was interesting to note that none of the surfers mentioned that experienced, everyday surfers like themselves would be an at-risk population for concussion. This was an interesting finding, as more than half of the sample had experienced at least one or more SRC’s while surfing. However, as Hunt (1995) pointed out, risk is often framed in direct relation to one’s level of skill, and experience and claimed that behaviours viewed as “excessively risky” for one population may be neutralized by another. Through Hunt’s conclusions, it could be suggested that the participants in the study viewed themselves as a not-at-risk population for SRC due to both their experience levels and the locations that they surfed. This was apparent in Jimmy and other participants’ responses, as they often perceived that surfers surfing beach breaks, shallow waters, and larger waves were more at risk-for a SRC than surfers like themselves. This denial of the injury again highlighted the fact that both male and female surfers held onto attitudes that supported the idea that SRC was not a severe and or serious injury within surfing.

***SRC: invisible injury.***

Lastly, a number of participants' framed SRC as *an invisible injury*—an injury that was difficult to see, feel, and subsequently diagnose within a surfing context. Below are a few responses from the surfers who framed and spoke about the invisibility of SRC:

**Evan:** Yeah, like if someone had a scar on their face, then it's like, 'Oh how badass is that?' You know? But, the concussion is like that thing that happens, that you can't see and remains there for a little while.

**Eden:** I dunno. It can really mess-up your life, but also, a lot of people get concussions and don't know that they've had them. As far as I know, I've never had a concussion, but no guarantees.

**Kayla:** People would talk more about [cuts and lacerations] because you know, you rip your wetsuit, or you got a big gash and blood coming out, so that's probably why people would like speak less about concussions is because there is not like a physical umm like mark to show.

These particular framings of SRC by the participants highlighted how SRC's invisibility led to more complications and uncertainties than solutions. For example, a number of surfers indicated that they would be more likely to return-to-surfing following a SRC because of its lack of visible symptoms, and indicated that they would be more inclined to stop surfing, and seek medical treatment if the injury was visible (i.e., cuts, broken bones, scrapes). Through these framings of SRC, I argue that the invisible nature of the injury actually played a significant role in the participants' responses to and management of the injury. This finding again highlighted that surfers often held onto and displayed functionalist interpretations of injury (Liston et al., 2018). This functionalist understanding of SRC not only enabled surfers the possibility to continue surfing after sustaining a concussive injury, due to its asymptomatic nature, but ultimately underpinned the irreverent attitudes that surfers displayed towards SRC in surfing culture.

In addition to the various ways that surfers' framed SRC, the surfers of this study demonstrated mixed and ambiguous understandings as to *what* exactly a concussion was,

how it occurred, and what some of the long-term side effects of concussion were. For example, a few surfers including Sam were able to demonstrate good understandings of SRC and were able to succinctly describe the injury and some of the physiological intricacies of the injury:

**Sam:** Isn't it when uhhh you have some trauma to the head which actually makes the brain move—and I am probably wrong— but it makes the brain move within the skull and actually hits the skull lining, and it damages or temporarily damages the brain, or something like that?

While Sam showed scepticism towards her answer, her description was actually quite accurate and spoke to both the physiological and neurological intricacies enmeshed in this complex injury. Although Sam and a few others presented good understandings of SRC, the vast majority of the sample demonstrated little to no understandings of the injury, what it was, and how it occurred. For example, Keith and Linda provided quite fragmented, vague and ambiguous understandings when asked what a concussion was:

**Keith:** I mean, the one thing I would say is that it's like a blunt force that like can temporally cause—to the head obviously. Or like yeah, to the head that like definitely causes you to, ahhh, like yeah? I don't know how to explain it. It's funny now that you mentioned it.

**Linda:** Umm, like head trauma? Caused on impact maybe, I dunno? (laugh)

Though the majority of the sample demonstrated vague and or little understanding of SRC, an interesting point was that regardless of one's gender, age, occupation, or surf experience; participants who had previously sustained a SRC were more likely to demonstrate a good understanding of the injury than participants who had *not* sustained a previous SRC. This finding aligned with what Liston et al. (2018) found, in that athletes who had previously sustained a SRC were more knowledgeable of the injury, and were more likely to recognize symptoms and subsequently treat their injuries accordingly. Moreover, Liston et al. (2018) noted that one of the consequences of having varied levels of

knowledge regarding SRC is the fact that many athletes will also have mixed interpretations on *how* to properly diagnose, manage and treat SRC as well.

### **Surfers' diagnoses and management of SRC.**

Out of the sample, every surfer indicated that they either had, or would self-diagnose themselves for a SRC if they suspected that they had one. When further asked *how* the surfer would go about diagnosing their SRC, the participants expressed a number of different responses including: “based on feeling and my body” (Molly); “sensitivity to noise” (Keith); “asking a series of questions” and or “performing the ‘light trick’” (Lane); “shine a light in their eyes?” (Sam); and to “Google it” (Eden). Notably, none of the surfers had mentioned that they had, or would use a concussion tool, or application to diagnose a SRC, and none of the participants who had sustained a SRC attempted to seek medical attention for their concussive injuries. In what follows, I highlight the three themes that developed throughout the data analysis that focused on the topic of diagnosis of SRC in surfing. The themes were as follows: 1) Surfers not knowing how to diagnose a concussion; 2) Surfers' disregard for medical attention; 3) and Surfers' gendered understandings of concussion management and diagnosis.

### ***Surfers not knowing how to diagnose a SRC.***

One of the more notable points that a number of participants brought up and were quite candid about was the fact that the majority of the surfers did not know *how* to diagnose a SRC and/or would not know what to do if another surfer had sustained a SRC. Lane, one of the more experienced surfers from the sample, candidly expressed that he would not know what to do if he, or another surfer were to sustain a SRC while surfing:

**Lane:** I don't know if I would recognize a concussion—the difference between a concussion or someone just passing out short of breath. Umm, cause



obviously if you fall sometimes you can be under water and if—who knows what happens under water, right?

So yeah, it's actually interesting to bring-up cause if that did happen—if someone did hit their head in the water, I would have no idea what to do...umm, I have like the basic lifeguard sorta knowledge, but not enough to diagnose a concussion.

While this was the case for a number of other surfers within the sample, one of the more significant points that became apparent throughout the data analysis was the fact that a number of surf instructors also expressed similar responses, indicating that they too, would not know *how* to go about diagnosing a SRC while surfing. Evan and Sam, two surf instructors disclosed of this within their responses:

**Evan:** But yeah, where you're going with that [question] it's kinda like what do you do? And where is the line for sitting on the beach and where is the line for, 'No, it's not a concussion' like I think that's really gray for me.

**Sam:** Yeah, I don't really know much about [concussion diagnosis]. It seems like something I probably should know, cause people get hit with boards in the head all the time. I dunno, how would you? I have no idea how to assess that? If they say they are fine...

These responses from the participants, and in particular, the surf instructors raised a number of questions, and concerns about *what* was being taught and addressed in surf instructor training and drew attention to the need for more comprehensive surf instructor training, especially in the area of head injuries and SRC. Although it could be suggested that all surfers should have some baseline training of SRC and how to diagnose and treat the injury, when it comes to important figures within surfing, oftentimes surf instructors are the ones patrolling the waters, addressing surfers' safety, and acting as a first responders to any distressed surfer, as most surfing subcultures lack important medical figures such as coaches, trainers, teammates and lifeguards. This is significant, as studies have shown that important figures like coaches and trainers have been shown to influence and impact the ways in which an athlete responds to, manages, and treats a SRC (Kroshus et al., 2015).

However, since surf instructors are oftentimes the most medically qualified individuals within surf spaces (especially in Canada due to the lack of lifeguards), it could be suggested that surf instructors have a significant role in diagnosing and treating and preventing SRC in surfing. Through these findings, I argue and recommended that more concussion information, knowledge, and training could be delivered to surf instructors when engaging with and completing national, and international surf instructor certification programs.

***Surfers' disregard for medical attention.***

In addition to participants not knowing how to diagnose a SRC, a number of participants expressed that they did not, or would not seek out medical attention following a suspected SRC, as Johnny stated:

**Johnny:** I didn't see a doctor or anything like that because I—you know, beyond just feeling dizzy and disoriented for the brief moments after the actual impact, I didn't feel that debilitated, so I didn't go further in terms of seeking medical help.

In fact, one surfer pointed out that they would not seek medical attention due to the fact that they believed that medical personal would not be able to do anything about the injury.

**Kayla:** If I didn't think it was very severe I would probably just...ahh self-diagnose, because I don't think they do anything for you at the hospital.

These responses and attitudes from the surfers highlighted their denial of the severity of SRC and again emphasized the fact that surfers held irreverent attitudes towards SRC in surfing. Not only did these attitudes express and promote the denial and downplaying of SRC in surfing, but also fostered and encouraged surfers to adopt more risk-taking behaviours, such as returning-to-play early— while still injured and experiencing concussive symptoms. These behaviours and the subsequent actions from the surfers supported the idea that surfing takes place within a *culture of risk* (Nixon, 1992). A culture where surfers are encouraged to accept and normalize ideas of risk, pain, and injury as a

way of complying to and embodying the *sport ethic* (Hughes & Coakley, 1991) that exists within surfing subcultures. This finding supported Nixon's (1992) earlier theorizations regarding the culture of risk within sporting subcultures and expanded upon his theorizations to suggest that the culture of risk may not solely exist within more traditional, team sport settings, but may also exist in individualized, non-traditional sporting subcultures as well. Moreover, this finding revealed that surfers and participants of non-traditional, individualized sports appeared to embody and display what Liston et al. (2018) analogously described as being *head strong*—which is a concept used to describe an athletes' wilfulness to conceal a SRC, and to play on through their concussive symptoms as a way of showing one's commitment to the sport and sporting subculture. Through the surfers' blatant disregard towards medical attention (following a suspected SRC), along with the fact that they continued to surf with a SRC it could be suggested that a number of the surfers from this study exhibited and embodied Liston et al.'s (2018) notions of being head strong in Canadian West Coast surf culture.

### ***Surfers' gendered understandings of SRC management and diagnosis.***

Throughout the interview process, it became clear that a number of the surfers expressed gendered understandings when discussing if male and female surfers would handle and manage their concussive injuries. In general, the surfers' responses were often intertwined in stereotypical, gendered understandings that linked hegemonic masculine ideals (Connell, 2005) to male surfers and their willingness to “push through a lot more” (Kayla), whereas female surfers were often framed as surfers who would be “more open and transparent” (Jimmy) with their injuries and would not surf while concussed. In addition to these gendered understandings, a number of the surfers' responses supported Sabo's (2004) idea of the *pain principle*— and the patriarchal cultural belief that one must

endure pain and injury as a way of enhancing one's character, moral worth, and social capital within a sporting culture. For example, Nicole illustrated this gendered understanding within her response:

**Nicole:** I think maybe a girl would be like, 'Oh I probably got a concussion' but I don't know if any of my guy friends would be like, 'I think I've got a concussion.' (laugh). [...] I don't know, cause they're trying to be tough, I guess. I don't really surf with any guys, but I don't know if they would get out and be like, 'Oh I hit my head on that wave, I think I probably shoulda got out of the water.' I can't imagine any of my guy friends saying anything like that. They take way bigger spills than I do, so...

From Nicole's responses we can see how she relied upon hegemonic masculine understandings to support the idea that male surfers embodied and displayed both *head strong* attitudes (Liston et al., 2018) and compliance to Sabo's (2004) pain principle, as a way of showing one's commitment to the sport and sporting subculture. Although these gendered understandings were commonly vocalized by the participants of the study, these responses were actually much more complex and layered with sensible gendered understandings that originally understood. For example, both male and female surfers relied upon and displayed hegemonic gendered commentaries about SRC and how one should manage their injury; however, at the same time it appeared that both male and female surfers tended to display "a consciousness of gender" (Sabo, 2004, p. 73) within their commentaries. For example, Jimmy highlighted this consciousness of gender when discussing the differences between male and females' experiences with a SRC in surfing:

**Jimmy:** Oh totally, males and females are different creatures. I think it's changing, but I think there's generally a masculinity, macho side of things where we want to act tough, and women generally don't have that, some of them have that, 'I wanna act tough around my guy friends, cause I don't want to be considered to be less.' Umm which is just ridiculous, but that it what it is. But I think generally women are more open and transparent than men are, in a lot of different ways, but especially when it comes to physical comfort...

Jimmy's response highlighted that he was quite cognizant of and conscious about his own gender and gendered understandings within his commentary. Moreover, Lane outright dismissed the idea that male and female surfers would handle their SRC differently, and contended that it solely depended upon the person, their skill set, and their ability to remain calm in the water, not one's gender.

**Lane:** Umm, no. I don't think there's a difference really. I think it depends solely on the person, if you're someone who panics in the water then you're gunna handle a concussion pretty terribly, and in the wrong way. But, if you're someone who can sorta like...I mean who knows how you're gunna act when you get a concussion, right? Umm but I think like there are people who are more comfortable and more adapt in the ocean and I don't think that has to do with gender, I think it's just the person.

This finding slightly differed from what Sabo's (2004) originally suggested where he found that woman's comments on sport pain and injury displayed a "consciousness of gender" that male comments did not. Furthermore, Sabo argued that male athletes integrated traits and embodiments of hegemonic masculinity into their responses but did not recognize that their understandings were underlined with gendered ideals. Notably, in comparison to Sabo's (2004) original theorization, this study found that while male and female surfers may have expressed some masculinized understandings and embodiments of SRC, it appeared that *both* male and female surfers were actually quite aware of and conscious of their own gender embodiments and gendered understandings when discussing the management of pain, injury and SRC within their commentaries.

Although it is difficult to pinpoint exactly *why* male surfers expressed more gender conscious responses towards pain, injury and specifically SRC than previously reported by Sabo (2004), one reason may be due to the fluid and evolving gendered dynamics in surfing subcultures. As Evers (2009, 2006, 2005, 2004) pointed out, surfers' genders and gendered embodiments remain fluid, dynamic, and are never fixed and are shaped by

spatial, biological, psychological and sociological assemblages. Following Evers' suggestions, it could be speculated that these factors, but importantly the *spatial* factors could have played a significant role in the surfers' gender conscious commentaries, as Canada's West Coast is known as the "female surf capital" of the world (Sayer, 2018), and prides itself on its "culture of acceptance" and large population of female surfers, and female surf instructors (Dart, 2018). Through the spatial significance of Canada's West Coast, and its inclusive surfing subculture, it could be argued that the Canadian West Coast surfing subculture promoted and engendered a heightened sense of gender, and gender consciousness amongst surfers that was/is not apparent in other, more traditional sporting cultures.

#### **Surfers' return-to-surf decisions.**

Overall, while a number of participants prefaced their answers by stating that their decision to return-to-surf would be contingent on the "level of pain" that they were feeling; every participant in the study disclosed that they would return-to-surf if they *think* that they had sustained a SRC. Out of the seven surfers who had sustained a concussion, three were forced to go to the hospital to treat more significant injuries,<sup>8</sup> while the other four disclosed that they continued to surf following their concussions. In general, surfers' decisions to return-to-surf (while still concussed) were based on three main factors 1) the wave conditions, 2) limited time to surf 3), and social pressures from other surfers. Each section is discussed in detail below.

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<sup>8</sup> In all three cases the participants disclosed that they reluctantly went to the hospital to treat more significant injuries, and noted that while they had sustained a concussion, their attention was drawn to their other injuries (i.e., broken back, broken nose, and a facial hematoma).

***Return-to-surf based on: wave conditions.***

One of the main factors that influenced the surfers' decisions to return-to-surf following a suspected SRC was because of the wave conditions in the water. As Evan and Sam noted:

**Evan:** It's super based on the waves. I mean if the waves were the best I've ever seen it, I'd have to like fight—I would fight a concussion. I would be like, 'Okay, how can I do this?' You know what I mean?

**Sam:** Yeah, maybe. Probably. Like it depends (laugh). If the severity of the headache or whatever is happening is making it hard for me to surf, but if it was something that kinda hurts a little bit and I could power through it, then yeah, I would probably just keep going, yeah. I think it's a scale of how bad is the concussion, how good are the waves? You know?

These responses were echoed by a number of other surfers in the sample, highlighting again that *both* male and female surfers appeared to hold and display *head strong* attitudes and embodiments towards SRC in surfing culture (Liston et al., 2018). This finding was significant as it indicated that *head strong* attitudes appeared to transcend into non-traditional, individualized sport settings and sporting subcultures like surfing (Liston et al., 2018). Equally, this finding illustrated that female surfers were just as willing as male surfers to accept risks, partake in risk-taking behaviours, and to play with and through a SRC as a way of committing themselves to the *sport ethic* within surfing's subculture (Hughes & Coakley, 1991; Young, 2012; Young & White, 1995). A sport ethic that encouraged risk-taking behaviours (and surfing concussed) as a way of increasing one's subcultural status and commitment to the group identity within Canada's West Coast surfing subculture (Hunt, 1995). Finally, this finding revealed that the conditions of the waves actually played a role in determining if one would continue to surf while concussed and proved to be a major factor that impacted surfers' decisions.

***Return-to-surf based on: limited amount of time.***

A number of surfers indicated that they would return-to-surf following a suspected SRC due to a limited amount of time in a particular surf location. For example, surfers justified their negligent responses by stating that they would continue to surf with a SRC if they were on vacation, in a remote surf location, or only had a finite amount of time in a particular surf location. Linda and Molly expressed these rationalizations within their responses:

**Linda:** I would probably like take time, but would probably be more inclined to get back in there sooner than if I was at home or something, especially you know sometimes when you travel there's like, 'Oh the swell is good today and tomorrow and that's it,' and if that was the case I would be just like, 'Well fuck I'll just go now and then deal with it later,' which is bad, but it's true.

**Molly:** I think a big motivating factor like why ummm, like why I would like surf with anything as long as I could endure it because we only have this short surf season here and I think most people out here are just like—they just wanna get it in while they can because we [Canada's West Coast] don't get surf in the summer. Yeah.

Through these commentaries we can see that both participants rationalized their return-to-surf decisions based on the location and the time of the year. Notably, Molly rationalized her decision to return-to-surf (while still concussed) by pointing out that the window to surf the best waves on the West Coast was rather small (winter months) and would motivate her to surf through a SRC in order to surf some of the prized breaks produced by the winter storms. This was significant as Nathanson et al., 2007 and Hay et al. (2009) both found that the time of the year (surf season) did impact the number of surf-related injuries sustained and found that the winter surf season produced the most surf related injuries when compared to other surf seasons. Collectively, this finding revealed that the time of the year, and location played a significant role in determining how and if a surfer would return-to-surf following a suspected SRC.



***Return-to-surf based on: social pressures from other surfers.***

Lastly, a few participants indicated that they would be inclined to keep surfing following a suspected SRC due to the pressures faced from other surfers in the water. Sam highlighted the significance of others in the water and how their presence alone could have impacted the surfers' return-to-surf decision following a suspected SRC:

**Sam:** I dunno. I would assume guys are always trying to be macho and, 'I am fine, I don't need directions' or whatever that kinda shit. And they would be like, 'Whatever, I can still surf'. Maybe a girl would be like, 'Hey like, my head hurts, I am gunna go lie down for a bit' (laugh)[...] But then...like sometimes there are not a lot of girls out there and a lot of guys in the line-up, so maybe girls feel they need to prove themselves. Like, 'No I am fine, I am cool.'

As we can see from Sam's response, it appeared that both male and female surfers may be inclined to continue surfing following a suspected SRC because of the *sportsnets* that exist in the water, and within surfing's subculture. As Nixon (1992) described, *sportsnets* are the immediate social networks that athletes surround themselves with, and often carry messages that rationalize and normalize ideas of pain and injury and encourage athletes to accept risky behaviours (like playing injured) as a way of complying to the sporting subculture. This finding was interesting and reiterated what previous research has suggested in that social networks (or sportsnets) within sporting subculture often reproduced cultural messages that encouraged athletes to accept risks and to play through pain and injury, such as SRC (Howe, 2001; Hughes & Coakley, 1991; Kroshus et al., 2015; Nixon, 1992; Young, 2004; Young & White, 1995; Young et al., 1994). However, the notable departure from these earlier findings was the fact that surfing often takes place within a sporting context that often lacks the important figures that make up a sportsnet (i.e., coaches, trainers, teammates). Moreover, this finding was similar to what Sanderson et al. (2017) found in their recent qualitative SRC study, where they found that one of the

main reasons athletes didn't disclose of a SRC was because of the "conformance to sporting culture" and team allegiance." This finding illustrated that the sportsnets, and the surfers that make up these sportsnets within the Canada's West Coast surfing subculture influenced a surfers' willingness to disclose or not disclose of their SRC.

Interestingly, what this finding revealed was that despite the presence of more "traditional" sportsnet figures such as coaches, trainers, and medical personal within the surfing contexts; surfers were often influenced by other surfers to continue surfing with and through a suspected SRC. This was interesting, as other studies have suggested that teammates will often play through pain and injury for fear of letting their teammates down, or by letting the team down (Sanderson et al., 2017; Hughes & Coakley, 1991). However, in the case of surfing, most often it takes place within an environment where teammates do not exist, which made it difficult to understand *how* and *why* surfers benefited from the pressures of other surfers to keep surfing while injured. One speculation may be because of the *sport ethic* (Hughes & Coakley, 1991) embedded within surfing's subculture, which promotes and encourages athletes to play with and through pain as a way of showing one's committing to the sporting subculture and as a way of expressing oneself as a "real" athlete; however, it may also be attributed to the surfers' *head strong* (Liston et al., 2018) attitudes towards SRC which encouraged surfers to wilfully conceal their SRCs as a way of presenting oneself as a real athlete.

In addition to this finding, there also appeared to be a gendered dynamic linked to surfers' return-to-surf decisions. These gendered understandings expressed by Sam, where echoed by a number of other participants from the study. Often the surfers would fall upon hegemonic gendered understandings to contend that female surfers were simply more "intelligent about their injuries" (Kayla), "worry a little bit more" (Molly) and were "more

transparent than men” (Jimmy). Although these gendered understandings were conveyed by a number of surfers, a few surfers including Sam pointed out that females may also feel undue pressure to hide and downplay their SRCs when surfing with male surfers, as a way of upholding the sport ethic within surfing’s subculture and showing one’s commitment to the sport (Hughes & Coakley, 1991). Eden also spoke to these undue pressures to ride riskier waves when surfing with male surfers:

**Eden:** A lot of the time[s] when I have gone [out], I go with like the boys...and yeah, so sometimes I feel some pressure to go out into a certain wave. There have been times when I felt less comfortable about it, and then times when I was like, ‘Well, whatever, like gotta do what feels good.’

This finding illustrated that not only did other surfers in the water influence one’s return-to-surf decisions, but also suggested that the gender of the other surfer(s) in the water was significant and could also influence one’s decision to surf in particular locations and to attempt riskier surfing. This finding aligned with what Nixon (1996a) found in that female athletes participating in environments with higher proportions of male athletes were more likely “to be exposed to attitudes and talk that encourage[d] ignoring pain or giving the appearance of ignoring pain” (p. 84). Moreover, this finding highlighted some of the gendered nuances of surf breaks and illustrated just how the surf break itself can act as space that both embodied and reproduced dominant gendered norms and understandings (Waitt, 2008, 2007).

### **Concussion safety and education in surfing culture.**

In this section I featured the participants’ views, thoughts, and suggestions regarding concussion safety in surfing. It is important to keep in mind that this section was developed strictly from the understandings, ideas, and suggestions presented by the surfers, for surfers. I must emphasize that these findings do not necessarily provide any solidified answers, nor deep theoretical engagement, but rather highlight some of the issues and

complexities of SRC, and more importantly, address possible solutions on how to better educate, and translate concussion knowledge across the sporting subculture. Moreover, this section allowed us, from a grassroots level, to identify and analyze what is currently being done in Canadian surf culture to address SRC, and equally to highlight what is *not* being done, and to speculate on what *could* be done to raise awareness and better educate surfers about SRC in Canadian surf culture. In what follows, I discuss three overarching sub-sections: 1) Whose responsibility is it to inform surfers about SRC? 2) What is currently being done to address SRC in Canadian surf culture 3) What could be done to raise awareness/ better educate surfers about SRC in surfing?

***Whose responsibility is it to inform surfers about SRC.***

The participants of the study listed a number of different possibilities for *who* is responsible for informing surfers about SRC in Canadian West Coast surf culture. Overwhelmingly, almost all of the participants pointed out that surf instructors should be the ones responsible for informing surfers about SRC in surfing and should be the ones who inform surfers how to prevent the injury. In addition, a few participants pointed out that surf rental shops should be the ones informing and educating surfers about SRC, whereas a few other participants pointed out that it should be the surfer’s own responsibility to inform themselves about the risk of SRC and how to prevent the injury. The table below highlighted the various responses given by the participants when asked *whose* responsibility it was to inform surfers about SRC.

Table 4  
*Whose Responsibility is it to Inform Surfers About SRC?*

Who’s responsible?	Surf instructors	The surfer (own responsibility)	Surf rental shops	Surf media	Surf instructor training	Equipment manufactures	Surf organizations (WSL)
<b>Total</b>	10	3	3	1	1	1	2

*Note: Participants were able to give more than one answer.*

While many of the participants (surf instructors included) were quick to point out that surf instructors should be ones held accountable for disseminating SRC information to surfers; the surf instructors in this study also pointed to a few logistical complexities that would make it difficult to inform and educate surfers about SRC during surf lessons. These points included the fact that many surf instructors admitted that they only have a finite amount of time with each group of (beginner) surfers to educate them on both the skills of surfing, as well as the safety in surfing—making it difficult for them to cover SRC on top of all the other information and instructions. In addition, a number of surf instructors were quite candid and pointed out that they, themselves, did not have adequate training or knowledge about SRC in surfing, and/or knowledge on how to diagnose and/or treat the injury. Although the majority of the surf instructors’ expressed that they, “could be doing a better job” (Sam) educating surfers about SRC and how to prevent it; the surf instructors also indicated that due to the lack of training and knowledge, they would not feel comfortable nor equipped to discuss and/or informing other surfers about SRC when their own understandings of the injury were blurred and fragmented. Though it is easy to place the blame and or responsibility upon surf instructors to disseminate information about SRC to surfers, the surf instructors’ responses raised a few questions for consideration including: What (if any) SRC content is being instructed during surf instructor training and certification? Should more time be allocated during surf lessons to cover SRC information and prevention? And is it the surf instructor’s responsibility to educate, and inform (new) surfers about SRC in surfing, and if not, who may that be?

***What is currently being done to inform surfers about SRC in surfing.***

Though surf instructors disclosed that they could be doing a better job to informing surfers about the risk of SRC in surfing and how to prevent the injury, the majority of the

surf instructors agreed that they felt like they already covered head safety and safety protocols adequately within their surf lessons. For example, Nicole, an experienced surf instructor highlighted and emphasized the importance of head safety in her surf lessons:

**Nicole:** Umm, I think that on the surf instructor side of things, I think [concussions] talked about because with students you have to be very careful. I mean in our lesson, I think it's probably—covering your head is probably something brought up more than anything else, I think I bring it up two or three times during the part on the beach. You like show them how to cover their head, and then if it's kids, you make them practice and then usually when you're practicing standing up and all of that on the beach then you would also bring in like, 'Okay if you fall off, cover your head.' And then when you're out there that's one of the things that I am yelling at people more than anything else: 'Use your arm helmets!' over and over again, until people get it, cause I mean usually it takes someone one surfboard to the head and then they're like, 'Oh, maybe I should cover my head,' but it's nice to get them to do it before that actually happens.

This excerpt from Nicole not only emphasised the importance of head safety in her, and other surf instructors' lessons, but also spoke to the importance of the hand-helmet<sup>9</sup> action when falling in surfing, and how to properly execute of this safety technique. Though this technique may protect and/or reduce a surfer's chance of sustaining a facial or neck laceration, broken bones, or ocular injury, no research has determined its effectiveness, or a helmet's effectiveness against concussion to date (Daneshvar et al., 2011).

Although Nicole and other surf instructors from the West Coast claimed to instruct and reinforce the hand-helmet technique to surfers in their surf lessons, outside of a surf lesson context there are appeared to be little engagement with this technique by surfers. My field notes from Cox Bay (a busier beach south of Tofino) picked up on the inconsistent ways that surfers fell into the water:

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<sup>9</sup> The hand-helmet action is a skill that is instructed in most surf schools when learning how to fall. As the name suggests, one uses their arms to cover their head—creating a helmet like shell to protect one's head from potential contact with the water, the reef, rocks, the bottom or contact with their own or other's surfboards.

*July 1<sup>st</sup>, 2018*

It was hard to see trends in the specific ways that surfers fell into the water. Some surfers would fall back (covering their head), other surfers would fall back not covering their heads. Some surfers would fall forward or would sort of jump-away from their board when they noted that they were falling, while others would either fall onto their board, or would slowly kneel down on their board, as a way of softening the blow and/or impact of the waves. On the more extreme side, a few surfers surrendered themselves to the ocean by simply falling into the ocean without looking around them leaving their board behind flailing in the air behind them.

Though I observed that *some* surfers engaging with the hand-helmet technique, those surfers were few-and-far between. In fact, often the way(s) that a surfer fell were determined by and contingent on a number of other factors including: the height and shape of the wave, the surfer's own positioning on their board, other surfers in the water, and e geographical features in the water such as rocks, logs, and or boats. Through this finding it is difficult to decisively conclude that hand helmets would actually prevent a SRC in surfing. Future research could consider exploring the effectiveness of the hand-helmet technique in surfing, and if the technique could prevent or lessen the number of SRC in surfing.

In addition to head training and safety in surf lessons, a few surfers pointed out that they had engaged with, and or saw concussion-related content in a few surf magazines recently. Notably, a few surfers drew attention to concussion-related articles in mainstream surf magazines like: *Surfer*, *STAB*, and *Surflife*. This exposes not only illustrated that fact that mainstream surf media was informing surfers about the severity of head injuries and concussion in surfing, but also demonstrated the fact that surfers *were* willing to and *are* actually engaging with SRC content in other forms as well. This finding illustrated that surf media could be a good way to disseminate SRC information to surfers.

***What could be done to raise awareness and educate surfers about SRC.***

Throughout the interviews, I encouraged the participants to think about and discuss particular ways that SRC knowledge could be translated and disseminated to surfers and surf instructors across the West Coast of Canada. Overall the participants came up with a few substantive tools that could be used to educate surfers about SRC. A few surfers noted that surf instructors could get additional training on how to recognize, diagnose, treat, and prevent SRC throughout their surf instructor certifications. Through this additional training, surf instructors could learn about SRC, and how to best manage someone with a suspected SRC, and could equally draw attention to preventative manners, as studies have suggested that we should now shift our attention away from the management of SRC, and should focus on “preventing participants from becoming injured in the first place” (Batten, White, Anderson, & Bullingham, 2018, p. 1293).

In addition, some participants pointed out that surf shops and surf schools could create a “concussion waiver” that could be handed out and addressed during the rental of surf gear, or before entering the water for a surf lesson. The participants suggested that the waiver could outline common signs and symptoms of concussion and could provide the surfers with additional information on how to recognize, manage, and prevent SRC in surfing. By reading and signing a waiver, surfers would not only certify that they had indeed read the document but could use this document to hold surfers accountable to take the appropriate steps moving forward following a potential SRC. Interestingly, concussion waivers already exist in a number of mainstream sports including hockey, soccer, rugby, and football, and even exist in other more non-traditional sport settings as well such as skateboarding, skiing, and snowboarding; yet, the sport of surfing still *does not* have a concussion waiver form, nor does it have a return-to-surf protocol for surfers to engage



with following a suspected SRC. Creation and engagement with such tools would not only help surfers recognize a potential SRC but would hopefully allow surfers the ability to better manage and prevent SRCs moving forward.

Finally, a number of surfers pointed out that surf-related media and/or reports or articles on surfing websites would be a good way to disseminate SRC knowledge to surfers. While a number of surfers pointed out that a report or brief article about SRC in surf media would be something that they would actually engage with (and in some cases had engaged with previously already); the participants noted a few caveats that would have to be considered before moving forward with this option. These caveats included the fact that the language used would have to be articulated in a way that surfers could easily comprehend and would have to be free of academic jargon, and/or theoretical engagement. In addition to these requirements a few participants expressed that the documents would have to be short and concise and would have to have something attractive about it that would encourage the surfer to read the article including things like, pictures, features from local surfers, and would have to be written in an informal way that would garner and attract surfers' attention. Using social media, and or surf websites could be a beneficial way to disseminate concussion information to surfers, as every surfer indicated that they frequented surf-related websites and social media pages, such as *Magic Seaweed* and the *World Surf League's* (WSL) social media pages.

While it's difficult to determine *if* these outputs would work within surfing subcultures, and if surfers would actually engage with this content, these suggestions do provide us with a few different strategies that could be considered when/if disseminating SRC information to surfers. In addition to these suggestions, it is strongly recommended that surfing governing bodies create and implement return-to-surf protocols, concussion

waivers, and or concussion tools for surfers and surfing stakeholders to use and implement when instructing lessons and or surfing, as these tools would not only help surfers properly diagnose SRC, but could also help educate and inform surfers about SRC and how to prevent it.

### **Summary.**

Collectively, the findings revealed that surfers expressed mixed understandings of SRC and often framed and interpreted the injury in a way that favoured functionalist understandings of injury, whereby for in order for an injury to be classified as *serious* it must be both visible and must cause a loss of time from the sport. These functionalist understandings, I argued, underpinned the surfers' irreverent attitudes towards SRC, which promoted the downplaying, concealment, and denial of SRC as a way of showing one's commitment to the sport and sporting subculture.

Second, the findings indicated that surfers displayed irreverent attitudes towards the diagnosis and management of their SRC and presented disregard towards seeking out medical attention following a suspected SRC. Moreover, the findings suggested that while both male and female surfers displayed hegemonic understandings of gender within their commentaries, the participants also displayed commentaries that supported the idea of showing a "consciousness of gender," which differed from what Sabo (2004) originally illustrated in his study. This finding, I argued, could have been influenced by a number of factors including the fact that the West Coast of Canada, and in particular Tofino, is the unofficial women's surf capital of the world, and promotes and prides its self upon acceptance amongst female surfers and large contingencies of female surfers.

Finally, the findings illustrated that female athletes were *just as willing* to play with and through pain, injury, and SRC as their male counterparts were, and illustrated that these

understandings of pain, injury and risk could transcend across traditional sporting cultures into more individualized sporting cultures like surfing. In addition, the findings revealed that surfers based their return-to-surf decisions following a suspected SRC on three different factors: wave conditions, limited time to surf, and the pressures from other surfers. In particular, every surfer from the sample disclosed that they would or did return-to-surf following a suspected SRC, and based their decisions on one of the three factors above. This finding not only displayed that the surfers held irreverent attitudes towards concussion, but also illustrated the fact that both male and female surfers' embodied *head strong* (Liston et al., 2018) notions within surfing, where surfers would wilfully conceal their SRCs, and would be encouraged to surf through their injuries as a way of showing one's commitment to the sporting subculture. Furthermore, the findings illustrated that a surfers' *sportsnet* (Nixon, 1992) and *who* the surfer was surfing with (particularly, the gender of the other surfers) could influence a surfer's return-to-surf decisions following a suspected SRC.

## **RQ #2: Surfers' Perceptions and Attitudes Towards Protective Headgear in Surfing**

In general, surfing has been labelled as a "relatively safe sport" when comparing injuries rates to sports like football, rugby, and hockey (Booth, 2004; Taylor et al., 2005). However, despite its innocuous portrayal, the sport of surfing has witnessed a surge in head-related injuries over the last two decades, signifying that head injuries now make up somewhere between 25 to 43% of all surf-related injuries (Hay et al., 2009; Nathanson, 2007, 2002; Taylor et al., 2005; 2004; Ulkestad & Drogset, 2016). Following similar trends, surf-injury epidemiology studies have also suggested that SRC rates appear to be increasing as well (Swinney, 2015). Despite the fact that both head-related injuries, and SRC appear to be on the rise amongst surfers, only a small proportion of surfers (1 to 8%)

claim to wear protective headgear<sup>10</sup> (Nathanson et al., 2002; Taylor et al., 2005). Noting both the rising rates of head-related injuries in surfing, and surfers' inherent reluctance against the use of protective headgear in surfing, this research question explored Canadian West Coast surfers' perceptions and attitudes towards protective headgear in surfing and addressed *why* surfers do not wear protective headgear while surfing. Moreover, this study further attempted to situate the surfers' rationalizations for not wearing protective headgear by exploring their understandings within a socio-cultural context.

From the sample *none* of the surfers indicated that they wore or had ever worn protective headgear while surfing despite the fact that the majority of the participants had experienced a head-related injury while surfing. Throughout data analysis five themes were developed that indicated *why* surfers did not wear protective headgear while surfing. Surfers from the study indicated that they did not wear protective headgear because 1) *Protective headgear is uncomfortable and can hinder one's performance*; 2) *No need for protective headgear, you're only falling into water*; 3) *Protective headgear is only for particular surfers or conditions*; 4) *Protective headgear is for other 'high-risk' sports, not surfing*; and 5) *because of aesthetic reasons/not popular in surf culture*. In addition to these findings, the participants were asked to comment on protective headgear's effectiveness in surfing, and if they thought there was a future for protective headgear in the sport.

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<sup>10</sup> The term, "protective headgear" in this context, and for the remainder of this section, will refer to the various types of helmets that are worn while surfing—most often referring to Gath helmets, which are brand of helmets that are specifically designed for participants of water sports. Sunshine (2003) describes these helmets, explaining that they are often made of shatterproof plastic and lined with foam, and notes that they are designed to provide protection against impact injury, and environmental elements like wind, water chill and sun rays. In addition, Sunshine notes that surf helmets may also help minimize the risk of chronic damage to one's ears.

### **Protective headgear is uncomfortable and can hinder one's performance.**

A number of participants noted that they did not wear protective headgear while they surfed because they believed that the equipment was uncomfortable or would actually impede or hinder one's performance on the water. Tyler and Johnny discussed their hesitation to wear protective headgear based on the perception that it would hinder their performances and possibly lead to greater risks and or injuries:

**Tyler:** I don't know, it just seems uncomfortable. I don't know... I honestly think it would hinder the performance of [surfing] just having your head being heavy.

**Johnny:** I just heard of complaints that it jerks your head around when you take a wipeout. I heard bad things that like, you know you could be protecting your head, but then the wave sorta pulls on your helmet and then can like hurt your neck or something like that. So, I guess my reluctance to wear it comes from the fact that I might just be causing myself more inconvenience and umm possibly injuring myself by extending my neck or something like that.

While it is difficult to pinpoint the accuracy of these claims due to the limited amount of research that exists on this topic, and particularly, the effectiveness of protective headgear, this finding did highlight that there seemed to be a reluctance to wear protective headgear in surfing because of the idea that it may impeded or hinder one's performance on the water and may even lead to more risks or injuries. Despite the lack of evidence to support this claim, Taylor et al. (2005) found similar findings in their study and reported that surfers disliked wearing protective headgear because they found that they were "uncomfortable" or "claustrophobic," and ultimately affected their sense of balance and ability to hear on the waves. In addition, they found that the majority of the surfers would rather risk an injury than wear protective headgear. Although this finding may sound unreasonable, the finding actually holds quite a bit of merit, and echoed some of Johnny's concerns, as apart from the fact that protective headgear *may* prevent some head-related injuries, no study has shown that protective headgear actually prevents SRC (Daneshavar et al., 2011). In fact, Taylor et

al. (2005) noted that the use of protective headgear in surfing may actually increase one's likelihood for sustaining a more severe injury by interfering with their balance or vision and may induce a false confidence that encourages surfers to take greater risks. Johnny voiced these similar concerns, as he stated that the use of protective headgear might actually increase the chance of sustaining other injuries to the neck or face while surfing. Based on what Taylor et al. (2005) found, along with Johnny and other's comments, it appeared that surfers' reluctance to wear protective headgear stemmed from the fact that protective headgear not only may impeded or hinder one's performance but may actually cause one to take greater risks and thus increase the risk of other injuries. Although it is difficult to speculate on the effectiveness of protective headgear in surfing, it was also difficult to understand *how* surfers were able to form their opinion that protective headgear was uncomfortable and or could cause further injury considering the fact that none of the surfers admitted to ever wearing protective headgear while surfing. Despite these shortcomings, the findings illustrated that surfers did not wear protective headgear due to the fact that they believe that the equipment would interfere with their performance, and or instil a false sense of security that encouraged them to take greater-risks, and notably found that the use of protective headgear may actually increase ones likelihood of sustaining a more severe head or neck injury due to the mechanics of the equipment.

**No need for protective gear, you're only falling into water.**

A number of surfers rationalized their decision to not wear protective headgear while they surfed by stating that there was no need for protective headgear in the sport, and commonly relied upon the notion that surfing was a relatively safe sport because surfers *only fall into the water*. Molly, Sam and Keith relied upon these innocuous framings of

surfing and its environment as a way to justify their decision to not wear protective headgear while surfing:

**Molly:** Yeah and I think like the general surfer maybe isn't like intense enough, like to wear a helmet, like I honestly think it could be if people are doing bigger things, but like umm yeah, just surfing like head high or something, I would be like, 'You're falling in water, you should be fine!'

**Sam:** Cause you think you're falling on water, so why would you? But I've definitely had some hard impacts with the water. And then of course, you have to worry about your board hitting you, which doesn't happen that often...but for me it just like, 'Well, I am in the water, I am just going to fall into the water, why would I needed a helmet, you know?'

**Keith:** Water doesn't hurt me, if I fall in the water like who cares?

Through these responses we can see that that the surfers, in general, appeared to perceive that there was no need for protective headgear in surfing due to the fact that they were only falling into water. By this logic, the surfers from the study believed that the ocean and water acted as a buffer between themselves and other (hazardous) points of contact such as reef, rocks, and the ocean floor. On one hand this finding illustrated what previous research has suggested, in that participants of individualized sports (i.e., surfing, bicycling, roller-blading) tended to display attitudes that supported the idea that was no need for protective headgear in their sporting cultures (De Nooijer, De Wit & Steenhuis, 2004; DiGuisseppi, Rivara & Koepsell, 1990; Finch, 1996; Seijts, Koh, Bouter & Klip, 1995; Taylor et al., 2005). However, on the other hand, this finding differed from what previous research suggested in that it illustrated that both male and female surfers held the perception that water would act as a buffer between the surfer and other potential hazards, and therefore would reduce the risk of head injury (Taylor et al., 2005). A perception, that I argue, promoted a false sense of security and fabricated understanding of safety amongst surfers that encouraged them to take greater risks due to the assumption that they were *only falling into water*.

**Protective headgear is for particular surfers or particular conditions.**

While all the participants disclosed that they did not wear protective headgear while they surfed, the majority of them suggested that protective headgear would be useful for particular types of surfers or for surfing in particular conditions. Linda spoke to this in her response:

**Linda:** Umm, I feel like wearing protective headgear is more appropriate if you're surfing maybe in more confined spaces, you know, if you're surrounded by like steep rocky cliffs or there's a shallow section of rocks, or it's a really gnarly steep beach break or something. I've seen people wearing helmets in the water and those are typically the places where people are wearing them, or when people are big wave surfing where they're likely to smash into the water hard...I just think that there's a time and a place for them...I think it's condition and wave dependent.

As we can see from Linda's response, she and the rest of the sample believed that particular surfers and surfers surfing in particular environments and or conditions should wear protective headgear. The participants generally equated rocks, exceeding wave-height, shallow sections, steep breaks, and confined spaces to more risky surf conditions where they believed that surfing with protective headgear would be beneficial. This finding supported what Finch (1996) found in her study on teenagers' attitudes towards bike helmets, where she found that both male and female youth believed that protective headgear was only required in particular circumstances with higher-levels of risk.

In addition, this finding also highlighted how the majority of the surfers from the study agreed that particular surfers including big wave surfers, older surfers, and beginner surfers should wear protective headgear. Jimmy and Kayla highlighted these particular notions within their responses:

**Jimmy:** I mean I see guys who wear helmets, like older dudes or big wave surfers, but umm. I think for different levels it might become [a thing]—like big wave or like surfing Pipeline.



**Kayla:** Umm helmets look kinda dorky usually. Umm people who, you know, if you're surfing big wave then, yeah, you'd probably wanna wear one and no one would make fun of you because you would be pretty badass already.

This finding echoed what Taylor et al. (2005) found in their study where they found that surfers would often make discourteous comments towards protective headgear in surfing and would often associate protective headgear with unfashionable surfing subgroups, such as older surfers, beginners, and inexperienced surfers. However, what this finding revealed that Taylor et al.'s (2005) study did not was that surfers held contradictory opinions when it came to big wave surfers wearing protective headgear. In fact, the majority of the participants in the study indicated that it would be "acceptable" for big wave surfers to wear protective headgear while they surfed, as many participants believed that big wave surfers were the most skilled and also the most at-risk population for head injury in surfing. This also could have been explained by the fact that, in most surfing subcultures, big wave surfers carry the most clout, and often have distinguished subcultural capital because of their surfing skills and their risk-defying behaviours. Through these understandings, it appeared that protective headgear was "acceptable" for some surfing subgroups (big wave surfers) and deemed as "non-acceptable" for others (Booth, 2001a). This finding highlighted the fact that surfers would often justify their reluctance to wear protective headgear in surfing, by framing protective headgear as something to be worn only by particular surfers and or surfers surfing particular waves and or conditions. And highlighted the significance of one's surf experience over all other factors (age, gender, board type) in determining if it was acceptable or not to wear protective headgear while surfing.

**Protective headgear is for other "at-risk" sports, not surfing.**

Participants from the study often framed and suggested that protective headgear was more of a concern for participants of sports and physical activities with higher perceived

risk of head injury. Most often, the participants would rationalize their decisions for not wearing protective headgear in surfing by comparing surfing to other at-risk lifestyle sports such as snowboarding, biking, and rock climbing and or to other contact laden sports like football and rugby. Tyler provided this comparison within his response:

**Tyler:** I've seen people wearing helmets, but you definitely don't—I don't know, it's not as big of a thing as say in snowboarding or skiing, you know? Everybody I know wears a helmet now skiing and snowboarding—if you don't you're an idiot (L). But yeah, definitely not in surfing.

From Tyler's response, we can see that surfers would often compare surfing to other high-risk sports as a way of rationalizing their decision to not wearing protective headgear while surfing. This finding aligned with what Taylor et al. (2005) found in that only a small proportion of surfers actually considered surfing to be associated with high-risk and found that “surfers were more likely to believe that there was a higher risk of head injury in other sports and physical activities” (p. 75). Interestingly, both male and female surfers displayed these beliefs and perceptions of risk, illustrating the fact that one's gender did not influence one's perception towards protective headgear.

#### **Aesthetic reasons/not popular in surf culture.**

A number of participants noted that one of the main reasons that they did not wear protective headgear while they surfed because of the aesthetics of the equipment and the “look” that the protective headgear portrayed. Evan and Linda spoke to the significance of aesthetics within their responses:

**Evan:** I think another thing why people won't wear helmets is cause like, when you think like surfing, it's a sport where everyone really wants to be cool, and good at it. And if you're in a new spot where most people are new at surfing—which most people are here—like you don't want to be the one showing up wearing a helmet.

**Linda:** I think like, I dunno people when think about surfing, you know, you gotta be cool—they all look cool and helmets aren't cool, which is ridiculous,

but I feel like if someone's like, 'You should wear a helmet,' I'd be like 'I dunno' (laugh).

Following these responses, we can see that a number of surfers refused to wear protective headgear due to the “look” or “image” that protective headgear conveyed. This finding differed from what Taylor et al. (2005) originally reported, where they claimed that the appearance of protective headgear was *not* a barrier for surfers' engagement with protective headgear. While Taylor and company did conclude by stating that a more comprehensive analysis was needed to determine the accuracy of this claim, the findings from my study illustrated that there appeared to be a clear linkage between the aesthetics of protective headgear and surfers' reluctance to wear protective headgear. More accurately, what this finding illustrated was that the surfers' attitudes towards, and reluctance to wear protective headgear seems to be rooted in subcultural understandings of style, and the meanings attached to particular styles inherent in Canada's West Coast surfing subculture.

From the surfers' responses we can see that surfers were reluctant to wear protective headgear due to the image they conveyed— an idealized and authentic image that has been perpetually reproduced through surfing subcultures, and surf media as an homogenized individual who typically embodies a young, white, heterosexual, able-bodied, shortboard rider who wears nothing but a swimsuit or wetsuit and most importantly, never wears a helmet (Waite, 2008). It is through this glorified imagery of the idealized surfer and meanings attached to style and authenticity within the subculture (Wheaton, 2004) that I argue influenced surfers to not wear protective headgear while surfing. Moreover, what this finding illustrated was the fact that for a surfer to show *subcultural allegiance* (Bourdieu, 1984) within the West Coast's surfing subculture, the surfer had to not only express sincere subcultural practices (i.e., argot, surf performance, demeanour) but also had to dress and look the part of a West Coast surfer (i.e., black wetsuit, shortboard, no helmet) in order to

be accepted as an authentic member within the subculture (Muggleton, 2000). By this logic, it appeared that the surfers' reluctance to wear protective headgear in Canada's West Coast surfing subculture was actually underlined by deep subcultural meanings of style and authenticity, whereby in order to be accepted as a surfer within the subculture, the surfer had to dress the part, and subsequently not wear protective headgear.

Finally, and building upon some of these ideas discussed above, a few surfers disclosed that the reason that they did not wear protective headgear was because of the fact that no one else did or pointed out that protective headgear was unpopular in their surfing subculture. Johnny rationalized his decision to not wear protective headgear by pointing to the unpopularity of protective headgear within his response:

**Johnny:** 'Why don't I wear protective headgear?' Definitely a large part due to the fact that no one else does. If I wanna try and speak honestly with myself, you know?

Johnny and a number of other surfers disclosed that they did not wear protective headgear while they surfed because of the fact that no one else did. This finding was similar to what other studies found in that participants often validated their answers for not wearing protective headgear by stating that the that no one else did, and therefore they decided it was not needed (De Nooijer & Steenhuis, 2004; Finch, 1996). Interestingly, over the course of my observations I did not witness a single surfer wearing protective headgear while surfing, confirming what a number of surfers from the study had already mentioned. However, again, this finding pointed to the fact that there appeared to be particular meanings of style attributed to and wrapped up in what an authentic surfer *should* look like on the West Coast of Canada.

## Summary.

Overall, this study provided valuable information about surfers' perceptions and attitudes towards protective headgear and provided reasons for *why* surfers do not wear protective headgear while surfing. While the majority of the surfers discussed that they believed that protective headgear would not become popular in surfing, one participant optimistically pointed out that they believed that protective headgear would become popular in surfing one day:

**Lane:** Umm yeah, for sure, for sure, definitely. Sorta like, I'll use snowboarding as an example. I think so many people snowboard now and the level is so high that everyone is wearing a helmet, like you're considered stupid if you don't wear one, whereas ten years ago, it was cool not to wear one. I think with surfing, the increase in population and level and spots being explored, I think there will be some spots where you'd be considered to be a moron to surf without a helmet for sure. So I think with like increase in population and new spots and level, I think there will be helmets in the future for sure.

Lane's comments echoed what a number of previous surf-related injury studies have urged and tried to enforce for a number of years now— that being the mandatory use of protective headgear in surfing (see Nathanson et al., 2002, 2007; Swinney, 2015; Taylor et al., 2004, 2005; Ulkestad & Drogset, 2016). And while Braham, Finch, McIntosh and McCrory (2004) pointed out that changes in attitudes towards protective headgear can have an influential effect on the actual use of protective equipment in sport, we have to be reminded there are also a number of overbearing social, (sub)cultural, and political barriers and complexities that would make it difficult to regulate and encourage the use of protective headgear in a lifestyle sport such as surfing.

For example, and pertinent to the topic of SRC in surfing is the fact that while protective headgear may reduce lacerations, and soft tissue damage, no research has been able to assert that protective headgear actually prevents SRC (Daneshvar et al., 2011).

Interestingly, this study found that protective headgear may provide a false sense of security which may encourage them to take greater risks and surf in risky surf, which could lead to greater injury. Furthermore, the findings illustrated that protective headgear may actually produce greater risks and may increase the likelihood of sustaining greater injuries due to the pulling motion that the helmet creates. In fact, Braham et al. (2004) found that a number of participants would rather quit sport than wear protective headgear if it were made mandatory and was regulated. This finding and attitude amongst participants was clearly articulated in both the finding from my study and Taylor et al.'s (2005) study where we found that the surfers would rather risk an injury than wear protective headgear. This finding not only illustrated that surfers would show a strong resistance towards regulating and mandating protective headgear in surfing, but also illustrated that surfers would rather risk injury than wear protective headgear or may quit the sport because of the mandatory use of protective headgear. Finally, this study illustrated that aesthetic factors (for not wearing protective headgear) may be more significant than originally theorized by Taylor et al. (2005) and suggested that the "look" that protective headgear conveyed was a main reason why surfers didn't wear protective headgear while they surfed. While it is tough to speculate on the actual effectiveness of protective headgear in surfing, this study illustrated that surfers' attitudes towards and reluctance to wear protective headgear appeared to be bound to larger social, political, and (sub)cultural understandings and ideas inherent in the West Coast's surfing subculture.

## Chapter V: Conclusion

In this final chapter I provide an overview of the study's findings and discuss the substantive implications of these findings moving forward. Next, I address some of the project's limitations and conclude by highlighting a few areas that future studies could explore.

This thesis was twofold in that it examined 1) surfers' understandings and attitudes towards sport-related concussion in Canadian West Coast surf culture, and 2) examined surfers' perceptions and attitudes towards protective headgear in the lifestyle sport of surfing. The impetus for addressing these two particular areas of inquiry was driven by a few different factors including the fact that despite the rising rates of SRC in surfing, no return-to-surf protocols or concussion waivers exist for surfers to engage following a suspected SRC. Moreover, the study sought out to fill a number of theoretical gaps in existing sociological literature including the fact that no research, to my knowledge, has explored SRC in a "non-traditional," individualized sport setting such as surfing, despite the high occurrence of head injuries amongst surfers. Similarly, this study attempted to add to the growing body of qualitative research that has explored SRC through a sociological perspective and used a critical feminist perspective to highlight how larger political, social, and (sub)cultural factors influenced surfers' understandings and attitudes towards SRC and protective headgear in Canada's West Coast surfing subculture of. Finally, this study filled a significant methodological gap in concussion-based research and was one of the first studies to explore SRC through qualitative, ethnographic methods.

In general, the surfers from the study appeared to display mixed understandings of SRC, whereby some surfers knew *what* concussion was, while others had little to no understandings as to what it was. Subsequently, those who had little to no understandings

of the injury were more likely to not know how to diagnose and identify a SRC. The findings from the study also revealed that both male and female surfers displayed *head strong* (Liston et al., 2018) attitudes towards SRC, which encouraged surfers to wilfully conceal and deny their SRCs, as a way of showing one's commitment to the sport and the sporting subculture. These attitudes, I argued, not only encouraged risky-taking behaviours amongst surfers, but were underpinned and guided by functionalist understandings of injury, whereby the severity of an injury was based on the time lost from surfing, and more importantly based on the visibility of the injury. This was significant as these two factors that were often *not* characteristics of a SRC, which allowed surfers to conceal their injuries and continue to surf following a suspected SRC.

The findings revealed that all the surfers had or would self-diagnose their own SRC while surfing and found that the majority of the surfers either did not know *how* to diagnose a concussion, or would just deny or ignore the injury, and not seek medical attention. Moreover, contrary to Sabo's (2004) findings, this study found that male surfers *did* in fact show a "consciousness of gender" within their responses and commentaries towards sport-related injury. These understandings could have been attributed to a number of factors, but I ultimately argued that these responses could have been underpinned by the gender inclusive and gender accepting attitudes that is exhibited by locals from the West Coast surfing subculture. In addition, the findings from the study found that every participant ( $n=12$ ) would return-to-surfing *if* they suspected they had a SRC, and rationalized their decisions based on three main factors: 1) wave conditions, 2) limited time to surf, and 3) pressure from other surfers. This finding suggested that not only did environmental conditions dictate whether or not a surfer would return-to-surf still concussed but illustrated that the amount of time surfing in a particular location, and or the pressure from the surfer's



*sportsnets* (Nixon, 1992) and others in the water would influence their decision to return-to-surf still concussed.

Finally, the study showed that none of the surfers from the sample wore protective headgear or had ever considered it. In total, the surfers provided five main rationalizations for *why* they did not wear protective headgear. They did not wear protective headgear because they thought: 1) protective headgear was uncomfortable and would hinder one's performance 2) no need for protective headgear, you're only falling into water 3) protective headgear was for particular surfers or particular conditions 4) and aesthetic reasons/ not popular in surfing. Many of these findings echoed what Taylor et al. (2005) had previously found in their study on surfers' perceptions towards protective headgear in surfing. However, one of the significant departures from Taylor et al.'s (2005) original findings was the fact that the "aesthetics" or "look" of protective headgear in surfing appeared to be a major reason *why* surfers in my study did not wear protective headgear. Originally Taylor et al. (2005) found that the appearance of protective headgear was *not* a barrier for surfers' engagement with protective headgear; however, the findings from this study determined that the look, and/or aesthetics of the helmet was one of the main reasons for not wearing protective headgear while surfing. This finding illustrated that the surfers' reluctance to wear protective headgear was rooted in deep subcultural understandings of style and ideas of *subcultural allegiance* (Bourdieu, 1984) inherent in Canada's West Coast surfing subculture. In addition, the findings also revealed that surfers did not wear protective headgear due to the fact that protective headgear may cause a false sense of security, which may encourage the surfers to take greater risks and risk more severe injuries. In fact, a number of surfers noted that wearing protective headgear may actually increase the chances of sustaining a head injury, due to the equipment pulling and tugging upon one's head.

Guided by the surfers' responses, a few recommendations were made on *how* to better educate and disseminate SRC information to surfers and stakeholders. One recommendation was that surf instructors could receive additional training on *how* to recognize, diagnose, treat, and prevent SRC from occurring in surfing, as typically these individuals were the ones that introduced the most people to the sport, and were often the ones with the most medical training in the water. Second, based on the findings from the study, I would highly recommend for the development of a return-to-surf protocol and or concussion waiver to be used and utilized by surf schools (surf instructors), surf shops (rental shops), and surfers alike moving forward, as in order to better recognize, diagnose, and treat SRC, we must first have the tools to do so. Third, a number of participants pointed out that surf (social) media would be a great medium to share and educate surfers about SRC in surfing and could be a lucrative way to spread awareness and preventative strategies in a medium that surfers would actually engage with. Finally, though helmets have been shown to prevent lacerations, contusions, and eardrum injuries, there has been no conclusive evidence that suggests that protective headgear prevents SRC in surfing. In fact, this study revealed that surfers expressed concerns and beliefs that protective headgear may actually *increase* the likelihood of sustaining a surf-related injury due to the fact that the protective headgear may cause a false sense of security which could encourage surfers to take greater risks and risk more severe injuries. Although I cannot say animatedly that helmets should not be used by surfers, I do propose that further research is needed in order to better understand protective headgear's effectiveness in surfing with regard to SRC before helmets are made mandatory and or are policed within the sporting subculture.

## **Project Limitations**

Although my cultural insider status as a surfer helped me gain access in Canada's West Coast surfing subculture and made it easier for me to recruit and build rapport with the participants, my insider status at times became a limitation throughout the research process. One of the most difficult tasks for me throughout the research process was maintaining a "critical distance" (Wheaton, 2002, p. 262) between myself and the participants' worldviews and subjectivities, as I too, held onto similar views and understandings. In particular, throughout the data analysis I found it difficult to critically analyze some of the comments and responses that my friends, and newly acquired surf acquaintances had made. Reflecting back on some of the interviews, there were a few instances where I felt like I could have critically interrogated some of the participants' responses (especially regarding taken-for-granted assumptions that I too held), but reluctantly decided not to in order to present myself as an authentic surfer. Despite these challenges, I tried to remain cognizant of my position as a researcher throughout the data analysis and constantly reminded myself to step-back and maintain a critical distance when contextualizing the respondent's views and actions (Thorpe & Olive, 2016).

In addition to these challenges, there were a few areas of inquiry that I would have liked to further explore during the interview process that only occurred to me later on in the data analysis phase. For example, while I was able to talk to a few participants about their experiences of and with SRC, there were a few important questions that I neglected to ask and should have inquired about such as, what level of experience the surfers was at when they sustained their concussive injuries, and equally, what time of year, and what the conditions were like when the surfer sustained their SRC. This information could have further supported some of my claims and connections between the surfers' surf experience

and the occurrence of SRC, and equally could have provided me with more concrete details linking particular surf seasons/ conditions to SRC occurrence within surfing. While these are areas I wish I had further explored and inquired about, I have to remind myself that it may have been difficult for the surfers to recall some of these minute details, as a number of their recollections were already fragmented and blurred due to their concussive injuries at the time.

### **Future Research Considerations**

There are a number of gaps in research knowledge around SRC in surfing that follow from the study's findings and would benefit from further research. First, I would encourage more researchers to adopt and apply ethnographic methods when studying SRC within sporting subcultures, as in order to better understand SRC we must explore the injury through various methodologies, epistemologies, disciplines, and theoretical lens. Second, further studies are needed to better understand protective headgear's effectiveness in surfing before helmets are regulated and or made mandatory within surfing. Equally, future studies could explore the effectiveness of the hand-helmet technique in surfing, and *if* it actually prevents head-related injuries in surfing. Third, as Young (2012) pointed out, more sociological research is needed on youth's perceptions and experiences of pain and injury. Future research could consider exploring youth surfers' perceptions and attitudes towards pain, and injury and in particular, SRC as their understandings may elicit interesting illustrations on how ideas of pain and injury become socialized and normalized amongst youth in sporting cultures. Lastly, I would encourage all future SRC research to commit to Malcolm's (2018) call for more public sociology of SRC and would encourage concussion researchers to disseminate their findings in channels and mediums that can be easily accessed and understood by participants, coaches, and trainers from various sporting

backgrounds. The impetus behind this commitment is grounded by the fact that in order to better understand this complex injury, we must be willing to share our knowledge and findings across disciplines and outside of academia.

## Bibliography

- Anderson, E., & Kian, E. M. (2011). Examining media contestation of masculinity and head trauma in the National Football League. *Men and Masculinities, 000*(00), 1-22.
- Atkinson, M. (2012). The empirical strikes back: Doing realist ethnography. In M. Atkinson & K. Young (Eds.), *Qualitative methods in sport and physical culture* (pp. 23-50). Bingley, UK: Emerald.
- Batten, J., White, A. J., Anderson, E., & Bullingham, R. (2018). From management to prevention: The new cure for sports concussion. *Br J Sports Med, 50*(21), 1293-1294.
- BCASI. (n.d.). About BCASI. Retrieved From: <http://www.tofino-bc.com/pdf/BCASI-manual.pdf>
- Beal, B., & Wilson, C. (2004). "Chicks dig scars": Commercialisation and the transformations of skateboarders' identities. In B. Wheaton (Ed.), *Understanding Lifestyle Sports: Consumption, Identity and Difference* (pp. 31-54). New York: Routledge.
- Beal, B. (1996). Alternative masculinity and its effects on gender relations in the subculture of skateboarding. *Journal of Sport Behaviours, 19*(3).
- Benson, P. (2017). Big football: Corporate social responsibility and the culture and color of injury in America's most popular sport. *Journal of Sport and Social Issues, 41*(4), 307-334.
- Birrell, S. (2000). Feminist theories for sport. In J. Coakley & E. Dunning (Eds.), *Handbook of Sports Studies*, (pp. 62-77). London, UK: SAGE.

- Blee, K., & Currier, A. (2011). Ethics beyond the IRB: An introductory essay. *Qualitative Sociology*, 34(3), 401-413.
- Booth, D. (2004). Surfing: From one (cultural) extreme to another. In B. Wheaton (Ed.), *Understanding lifestyle sport: Consumption, identity, and difference* (pp. 94-109). New York, NY: Routledge.
- Booth, D. (2001a). *Australian beach cultures: The history of sun, sand and surf*. Portland, OR: Frank Cass.
- Booth, D. (2001b). From bikinis to boardshorts: *Wahines* and the paradoxes of surfing culture. *Journal of Sport History*, 28(1), 3-22.
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. New York, NY: Routledge & Kegan Paul Ltd.
- Braham, R. A., Finch, C. F., McIntosh, A., & McCrory, P. (2004). Community football players' attitudes towards protective equipment—a pre-season measure. *Br J Sports Med*, 38, 426-430.
- Braun, V., Clarke, V., & Weate, P. (2016). Thematic analysis. In B. Smith & A. Sparkes (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 191-205). New York, NY: Routledge.
- Brayton, S., Helstein, M. T., Ramsey, M., & Rickards, N. (2017). Exploring the missing link between the concussion “crisis” and labour politics in professional sports. *Communication & Sport XX(X)*, 1-22.
- Bryman, A., & Bell, E. (2016). Research ethics. In A. Bryman, J. Teevan, & E. Bell (Authors), *Social research methods* (4<sup>th</sup> Edition, pp. 48-64). Don Mills: Oxford University Press.
- Bryman, A. (2015). *Social research methods*. New York: Oxford University Press.

- Canadian Olympic Committee. (2016). Canadian Surf Association Olympic Inclusion.  
Retrieved From: [http://csasurfcanada.org/wp-content/uploads/2017/03/2016-07-26\\_LT\\_Surfing-Tokyo-2020\\_v4\\_tv.pdf](http://csasurfcanada.org/wp-content/uploads/2017/03/2016-07-26_LT_Surfing-Tokyo-2020_v4_tv.pdf)
- Carroll, L., & Rosner, D. (2012). *The concussion crisis: Anatomy of a silent epidemic*. New York, NY: Simon & Schuster.
- Cassilo, D., & Sanderson, J. (2018). "I don't think it's worth the risk": Media framings of the Chris Borland retirement in digital and print media. *Communication & Sport*, 6(1), 86-110.
- CBC News. (Feb 13<sup>th</sup>, 2018). Death of Tofino surfer 'took a toll,' says man who attempted rescue. Retrieved From: <https://www.cbc.ca/news/canada/british-columbia/tofino-surfer-rescue-1.4534213>
- Charlesworth, H., & Young, K. (2004). Why English female university athletes play with pain: Motivations and rationalisations. In K. Young's (Ed.), *Sporting bodies, damaged selves: Sociological studies of sport-related injury* (pp. 163-180). Amsterdam, NETH: Elsevier.
- Connell, R. W. (2005). *Masculinities*. Cambridge, UK: Polity Press.
- Connell, R.W. (2002). *Gender*. Cambridge: Polity Press.
- Cooky, C. (2017). "We cannot stand idly by:" A necessary call for a public sociology of sport. *Sociology of Sport Journal*, 34(1), 1-11.
- Covassin, T., Elbin, R. J., Crutcher, B., & Burkhart, S. (2013). The management of sport-related concussion: Considerations for male and female athletes. *Transl. Stoke Res*, 4, 420-424.
- CTV Vancouver Island. (May 23<sup>rd</sup>, 2018). After second surfing death this year, calls grow for lifeguards on Tofino beach. Retrieved from:



<https://vancouverisland.ctvnews.ca/after-2nd-surfing-death-this-year-calls-grow-for-lifeguards-on-tofino-beach-1.3942834>

Curry, T. J., & Strauss, R. H. (1994). A little pain never hurt anybody: A photo-essay on the normalization of sport injuries. *Sociology of Sport Journal*, 11, 195-208.

Curry, T. J. (1993). A little pain never hurt anyone: Athletic career socialization and the normalization of sports injury. *Symbolic Interaction*, 16(3), 273-290.

Dart, J. (2018). The [women's] surfing capital of Canada. *Tofino Guide*. Retrieved From: <http://www.tofino-bc.com/geography/womens-surfing-capital-of-canada.php>

Daneshvar, D. H., Baugh, C. M., Nowinski, C. J., McKee, A. C., Stern, R. A. & Cantu, R. C. (2011). Helmets and mouth guards: The role of personal equipment in preventing sport-related concussions. *Clin Sports Med*, 30, 145-163.

Daskalos, C. T. (2007). Locals only! The impact of modernity on a local surfing context. *Sociological Perspectives*, 50(1), 155-173.

De Andrade, L. (2000). Negotiating from the inside: Constructing racial and ethnic identity in qualitative research. *Journal of Contemporary Ethnography*, 29(3), 268-290.

De Nooijer, J., De Wit, M., & Steenhuis, I. (2004). Why young Dutch in-line skaters do (not) use protection equipment. *European Journal of Public Health*, 14, 178-181.

Denzin, N. K. (1997). Performance texts. In W. G. Tierner & Y. S. Lincoln (Eds.), *Reframing the narrative voice* (pp. 179-218). Albany, NY: State University of New York Press.

DiGuseppi, C. G., Rivara, F. P., & Koepsell, T. D. (1990). Attitudes towards bicycle helmet ownership and use by school-age children. *Am J Dis Child*, 144, 83-86.

- Dodds, R. (2012). Sustainable tourism. A hope or a necessity? The case of Tofino, British Columbia, Canada. *Journal of Sustainable Development*, 5(5), 54-64.
- Donnelly, P. (2004). Sport and risk culture. In K. Young (Ed.), *Sporting bodies, damaged selves: Sociological studies of sports-related injuries* (pp. 29-57). Amsterdam, NETH: Elsevier.
- Dumas, A., & Laforest, S. (2009). Skateparks as a health resource: Are they as dangerous as they look? *Leisure Studies*, 28(1), 19-34.
- Ellis, C. (2009). *Revision: Autoethnographic reflections on life and work*. Walnut Creek, CA: Left Coast Press.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes, Second Edition*. Chicago, USA: University of Chicago Press.
- Evers, C. (2018). The gendered emotional labor of male professional 'freesurfers' digital media work. *Sport in Society*. DOI: <https://www.tandfonline.com/doi/full/10.1080/17430437.2018.1441009>
- Evers, C. (2015). Researching action sport with a GoPro™ Camera: An embodied and emotional mobile video tale of the sea, masculinity, and men-who-surf. In I. Wellard (Ed.), *Researching Embodied Sport: Exploring Movement Cultures*, (pp. 145-162) London, UK: Routledge.
- Evers, C. (2014). Masculinity, sport and mobile phones: A case study of surfing' in G. Goggin and L. Hjorth (Eds.), *Routledge Companion to Mobile Media* (pp. 375-384). New York: Routledge.

- Evers, C. (2009). 'The point': Surfing, geography and a sensual life of men and masculinity on the Gold Coast, Australia. *Social & Cultural Geography*, 10(8), 893-908.
- Evers, C. (2006). How to surf. *Journal of Sport and Social Issues*, 30(3), 229-243.
- Evers, C. (2005). *Becoming man, becoming wave*. (Doctoral Dissertation). Retrieved from: <https://ses.library.usyd.edu.au/handle/2123/7082>
- Evers, C. (2004). Men-who-surf. *Cultural Studies Review*, 10, 27-41.
- Finch, C. F. (1996). Teenagers' attitudes towards bicycle helmets three years after the introduction of mandatory wearing. *Injury Prevention*, 2, 126-130.
- Ford, N., & Brown, D. (2006). *Surfing and social theory: Experience, embodiment and narrative of the dream glide*. New York, NY: Routledge.
- Furness, Z. (2016). Reframing concussions, masculinity, and NFL mythology in *League of Denial*. *Popular Communication*, 14(1), 49-57.
- Furness, J., Hing, W., Walsh, J., Abbot, A., Sheppard, J. M., & Climstein, M. (2015). Acute injuries in recreational and competitive surfers. *AJSM*, 43, 1246-1254.
- Gaetz, M. (2017). The multi-factorial origins of chronic traumatic encephalopathy (CTE) symptomology in post-career athletes: The athlete post-career adjustment (AP-CA) model. *Medical Hypotheses*, 102, 130-143.
- Gaw, C. E., & Zonfrillo, M. R. (2016). Emergency department visits for head trauma in the United States. *BMC Emergency Medicine* 16(5), 1-10.
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Gilchrist, P., & Wheaton, B. (2017). The social benefits of informal and lifestyle sports: A research agenda. *International Journal of Sport Policy and Politics*, 9(1), 1-10.
- Gilchrist, P., & Wheaton, B. (2013). New media technologies in lifestyle sport. In B.

- Hutchins & D. Rowe (Eds.), *Digital media sport: Technology, power and culture in the network society* (pp. 169-185). London, UK: Routledge.
- Hagel, B., & Meeuwisse, W. (2004). Risk compensation: A “side effect” of sport injury prevention. *Clinical Journal of Sport Medicine*, 14(4), 193-196.
- Hall, S. (1997). The work of representation. In S. Hall (Ed.), *Representation: Cultural representations and signifying practices*. London, UK: Sage Publications Ltd. 15-64.
- Hay, C. S. M., Barton, S., & Sulkin, T. (2009). Recreational surfing injuries in Cornwall, United Kingdom. *Wilderness and Environmental Medicine* 20, 335-338.
- Henderson, M. (2001). A shifting line up: Men, women, and Tracks surfing magazine. *Continuum: Journal of Media & Cultural Studies*, 15(3), 319-332.
- Hesse-Biber, S. N., & Leavy, P. (2011). *The practice of qualitative research 2<sup>nd</sup> Ed.* London, UK: Sage.
- Hootman, J., Dick, R., Agel, J. (2007). Epidemiology of collegiate injuries for 15 sports: Summary and recommendations for injury prevention initiatives. *J Athl Train*, 42(2), 311-319.
- Howe, P. D. (2001). An ethnography of pain and injury in professional rugby union. *International Review for The Sociology of Sport*, 36(3), 289-303.
- Hughes, R., & Coakley, J. (1991). Positive deviance among athletes: The implications of overconformity to the sport ethic. *Sociology of Sport Journal*, 8, 307-325.
- Hunt, J. C. (1995). Divers’ accounts of normal risk. *Symbolic Interaction*, 18(4), 439-462.

- Hurd Clarke, L. (2003). Overcoming ambivalence: The challenges of exploring socially charged issues. *Qualitative Health Research, 13*(5), 718-735.
- International Surfing Association. (2018). ISA certified surf coach & instructor directory. Retrieved From: <https://www.isasurf.org/development-programs/coaching-instructing/certified-instructors-directory/>
- International Surfing Association. (2017). Recognition as an ISA Member. Retrieved From: [http://csasurfcanada.org/wp-content/uploads/2017/03/NF-Recognition-letter\\_CSASurf-Canada.pdf](http://csasurfcanada.org/wp-content/uploads/2017/03/NF-Recognition-letter_CSASurf-Canada.pdf)
- Kay, J., & Laberge, S. (2004). 'Mandatory equipment': Women in adventure racing. In B. Wheaton (Ed.), *Understanding Lifestyle Sports: Consumption, Identity and Difference* (pp. 154-174). New York: Routledge.
- Khurana, V., & Kaye, A. (2012). An overview of concussion in sport. *J Clin Neurosci, 19*(1), 1-11.
- King, D., Brughelli, M., Hume, P., & Gissane, C. (2014). Assessment, management and knowledge of sport-related concussion: Systematic review. *Sports Med, 44*, 449-471.
- Klick, C., Jones, C. M. C., & Adler, D. (2016). Surfing USA: An epidemiological study of surfing injuries presenting to US EDs 2002 to 2013. *American Journal of Emergency Medicine, 34*, 1491-1496.
- Kroshus, E., Garnett, B., Hawrilenko, M., & Baugh, C. M. (2015). Concussion under-reporting and pressure from coaches, teammates, fans, and parents. *Social Science & Medicine, 134*, 66-75.

- Lahman, M., Mendoza, B., Rodriguez, M., & Schwartz, J. (2011). Undocumented research participants: Ethics and protection in a time of fear. *Hispanic Journal of Behaviour Sciences*, 33(3), 304-322.
- Laurendeau, J. (2008). 'Gendered risk regimes': A theoretical consideration of edgework and gender. *Sociology of Sport Journal*, 25, 293-309.
- Leonard, A. (2007). Learning to surf in Kuta, Bali. *Review of Indonesian and Malaysian Affairs*, 41(1), 3-32.
- Liston, K., McDowell, M., Malcolm, D., Scott-Bell, A., & Waddington, I. (2018). On being 'head strong': The pain zone and concussion in non-elite rugby union. *International Review for the Sociology of Sport*, 53(6), 668-684.
- Lupton, D. (1999). *Risk*. New York, NY: Routledge.
- Lyng, S. (2005). *Edgework: The sociology of risk-taking*. New York: Routledge.
- Lyng, S. (1990). Edgework: A social psychological analysis of voluntary risk-taking. *American Journal of Sociology*, 95(4), 851-886.
- Malcolm, D. (2018). Concussion in sport: Public, professional and critical sociologies. *Sociology of Sport Journal*, 35(2), 141-148.
- Marar, M., McIlvain, N. M., Fields, S. K., & Comstock, R. D. (2012). Epidemiology of concussions among United States high school athletes in 20 sports. *The American Journal of Sports Medicine*, 40(4), 747-755.
- McCrory, P., Meeuwisse, W. H., Dvorak, J., Aubry, M., Bailes, J., Broglio, S., Cantu, R. C., ... Vos, P. E. (2017). Consensus statement on concussion in sport: The 5<sup>th</sup> international conference on concussion in sport held in Berlin, October 2016. *Consensus Statement*. 1-10.

- McGannon, K. R., Cunningham, S. M., & Schinke, R. J. (2013). Understanding concussion in socio-cultural context: A media analysis of a National Hockey League star's concussion. *Psychology of Sport and Exercise, 14*, 891-899.
- McGloin, C. (2017). Indigenous surfing: Pedagogy, pleasure and decolonial practices. In D. Z. Hough-Snee & A. S. Eastman (Eds.), *The critical surf studies reader* (pp. 196-240). London, UK: Duke University Press.
- McKee A. C., Stein, T. D., Nowinski, C.J., Stern, R. A., Daneshvar, D. H., Alvarez, V. E., ...Cantu, R. C. (2012). The spectrum of disease in chronic traumatic encephalopathy. *Brain: A Journal of Neurology, 136*(1), 43-64.
- Messner, M. A. (1992). *Power at play: Sports and the problem of masculinity*. Boston, MA: Beacon Press.
- Messner, M. A. (1990). When bodies are weapons: Masculinity and violence in sport. *International Review for The Sociology of Sport, 25*(3), 203-220.
- Mrazik, M., Brooks, B. L., Jubinville, A., Meeuwisse, W. H., & Emery, C. A. (2016). Psychosocial outcomes of sport concussion in youth hockey players. *Archives of Clinical Neuropsychology, 31*, 297-304.
- Muggleton, D. (2000). *Inside subculture: The postmodern meaning of style*. New York, NY: Oxford.
- Nathanson, A., Bird, S., Dao, L., & Tam-Sing, K. (2007). Competitive surfing injuries: A prospective study of surf-related injuries among contest surfers. *The American Journal of Sports Medicine, 35*(1), 113-117.
- Nathanson, A., Haynes, P., & Galanis, D. (2002). Surfing injuries. *The American Journal of Emergency Medicine, 20*(3), 155-60.

- Nixon, H. L. (2004). Cultural, structural and status dimensions of pain and injury. In K. Young (Ed.), *Sporting bodies, damaged selves: Sociological studies of sports-related injury* (pp. 81-98). Amsterdam, NETH: Elsevier.
- Nixon, H. L. (1997). Gender, sport, and aggressive behaviour outside sport. *Journal of Sport & Social Issue*, 21(4), 379-391.
- Nixon, H. L. (1996a). The relationship of friendship networks, sports, experiences, and gender to expressed pain thresholds. *Sociology of Sport Journal*, 1378-86.
- Nixon, H. L. (1996b). Explaining pain and injury attitude and experiences in sport in terms of gender, race, and sports status factors. *Journal of Sport and Social Issues*, 20(1), 33-44.
- Nixon, H. L. (1994a). Coaches' views of risk, pain and injury in sport, with special reference to gender differences. *Sociology of Sport Journal*, 13, 78-86.
- Nixon, H. L. (1994b). Social pressure, social support, and help seeking for pain and injuries in college sports networks. *Journal of Sport & Social Issues*, 18(4), 34-355.
- Nixon, H. L. (1993a). Accepting the risks of pain and injury in sport: Mediated cultural influences on playing hurt. *Sociology of Sport Journal*, 10, 183-196.
- Nixon, H. L. (1993b). Social network analysis of sport: Emphasizing social structure in sport sociology. *Sociology of Sport Journal*, 10, 315-321.
- Nixon, H. L. (1992). A social network analysis of influences on athletes to play with pain and injury. *Journal of Sport and Social Issues*, 16(2), 127-135.
- Olive, R., McCuaig, L., & M. G. Phillips. (2015). Women's recreational surfing: A patronising experience. *Sport, Education and Society*, 20(2), 258-276.



- Olive, R., & Thorpe, H. (2011). Negotiating the 'F-Word' in the field: Doing feminist ethnography in action sport cultures. *Sociology of Sport Journal*, 28(4), 421-440.
- Olivier, S. (2010). 'Your wave bro!': Virtue ethics and surfing. *Sport in Society*, 13(7/8), 1223-1233.
- Olivier, S. (2006). Moral dilemmas of participation in dangerous leisure activities. *Leisure Studies*, 25(1), 95-109.
- Palmer, C. (2016). Ethics in sport and exercise research: From ethics committees to ethics in the field. In B. Smith & A. Sparkes (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 355-366). New York, NY: Routledge.
- Pike, E. C. J. (2004). Risk, pain and injury: "A natural thing in rowing"? In K. Young (Ed.), *Sporting bodies, damaged selves: Sociological studies of sports-related injury* (pp. 151-162). Amsterdam, NETH: Elsevier.
- Pike, E. C. J., & Maguire, J. A. (2003). Injury in women's sport: Classifying key elements of "risk encounters." *Sociology of Sport Journal*, 20, 232-251.
- Richardson, L. (1998). Writing: A method of inquiry. In N. Denzin & Y. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (pp. 345-371). Thousand Oaks, CA: Sage.
- Robinson, V. (2004). Taking risks: Identity, masculinities and rock climbing. In B. Wheaton (Ed.), *Understanding lifestyle sports: Consumption, identity and difference* (pp. 113-130). New York: Routledge.
- Roderick, M., & Waddington, I. (2000). Playing hurt: Managing injuries in English professional football. *International Review for the Sociology of Sport*, 35(2),

165-180.

- Rosano, M. (2016). Canada's best surf spots to surf year-round. *Canadian Geographic*. Retrieved From: <https://www.canadiangeographic.ca/article/canadas-best-spots-surf-year-round>
- Rubin, H. J., & Rubin, I. S. (2005). *Qualitative interviewing (2<sup>nd</sup> ed.): The art of hearing data*. Thousand Oaks, CA: Sage.
- Sabo, D. (2004). The politics of sports injury: Hierarchy, power and the pain principle. In K. Young's (Ed.), *Sporting bodies, damaged selves: Sociological studies of sport-related injury* (pp. 59-79). Amsterdam, NETH: Elsevier.
- Safai, P. (2003). Healing the body in the "culture of risk": Examining the negotiation of treatment between sport medicine clinicians and injured athletes in Canadian intercollegiate sport. *Sociology of Sport Journal*, 20,127-146.
- Salmons, J. (2015). *Qualitative online interviews*. London, UK: Sage.
- Sanderson, J., Weathers, M., Snedaker, K., & Gramlich, K. (2017). "I was able to do my job on the field and keep playing": An investigation of female and male athletes' experiences with (not) reporting concussions. *Communication & Sport*, 5(3), 267-287.
- Sayer, A. (2018). How Tofino became Canada's surf city. *Redbull*. Retrieved From: <https://www.redbull.com/ca-en/tofino-history>
- Seijts, G. H. P., Koh, G., Bouter, L. M., & Klip, H. A. J. (1995). Barriers to wearing bicycle safety helmets in the Netherlands. *Arch Pediatr Adolesc Med*, 149, 174-180.
- Shilling, G. (2003). *The cedar surf: An informal history of surfing in British Columbia*. Vancouver, BC: New Star Books.

- Smith, B., & Sparkes, A. (2016). Interviews: Qualitative interviewing in the sport and exercise sciences. In B. Smith & A. Sparkes (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 103-123). New York: Routledge.
- Stranger, M. (2011). *Surfing life: Surface, substructure and the commodification of the sublime*. Surrey, ENG: Ashgate Publishing Company.
- Stranger, M. (1999). The aesthetics of risk: A study of surfing. *International review for the Sociology of Sport*, 34(3), 265-276.
- Steadman, L. (1997). From Gidget to Gonad Man: Surfers, feminists and postmodernisation. *ANZJS*, 33(1), 75-90.
- Steinman, J. (2009). *Surfing and health*. Maidenhead, UK: Meyer & Meyer Sport.
- Sunshine, S. (2003). Surfing injuries. *Current Sports Medicine Reports*, 2, 136-141.
- Surf Sister. (2018). History. *Surf Sister Website*. Retrieved From:  
<https://www.surfsister.com/history>
- Swinney, C. (2015). Assessing the prevalence of traumatic head injury amongst recreational surfers in the United States. *Hawaii Journal of Medicine & Public Health*, 74(12), 403-405.
- Taylor, D., Bennett, D., Carter, M., Garewal, D., & Finch, C. (2005). Perceptions of surfboard riders regarding the need for protective headgear. *Wilderness and Environmental Medicine*, 16, 75-80.
- Taylor, D., Bennett, D., Carter, M., Garewall, D., & Finch, C. F. (2004). Acute injury and chronic disability resulting from surfboard riding. *J Sci Med Sport*, 7(4), 429-437.
- Thorpe, H., & Olive, R. (2016). Conducting observations in sport and exercise settings. In B. Smith & A. Sparkes (Eds.), *Routledge handbook of qualitative research in*

- sport and exercise* (pp. 124-138). New York, NY: Routledge.
- Thorpe, H. (2011). *Snowboarding bodies in theory and practice*. Basingstoke, UK: Palgrave Macmillan.
- Thorpe, H. (2007). Gender. In D. Booth & H. Thorpe (Eds.), *Berkshire encyclopedia of extreme sports*, (pp. 103-111). Great Barrington, MA: Berkshire.
- Thorpe, H. (2006). Beyond 'decorative sociology': Contextualizing female surf, skate and snowboarding. *Sociology of Sport Journal*, 23, 205-228.
- Tjora, A. (2006). Writing small discoveries: An exploration of fresh observers' observations. *Qualitative Research*, 6(4), 429-451.
- Tofino Surf. (2018). Tofino surf competitions. Retrieved From: <http://www.tofino.surf/competition.php>
- Ulkestad, G. E., & Drogset, J. O. (2016). Surfing injuries in Norwegian arctic waters. *The Open Sports Sciences Journal*, 9, 153-161.
- Usher, L. E., & Kerstetter, D. (2015). *Surfistas locales*: Transnationalism and the construction of surfer identity in Nicaragua. *Journal of Sport and Social Issues*, 39(6), 455-479.
- Ventresca, M. (2018). The curious case of CTE: Mediating materialities of traumatic brain injury. *Communication & Sport*, XX(X), 1-22.
- Waitt, G., & Warren, A. (2008). 'Talking shit over a brew after a good session with your mates': Surfing, space and masculinity. *Australian Geographer*, 39(3), 359-365.
- Waitt, G. (2008). 'Killing waves': Surfing, space and gender. *Social & Cultural Geography*, 9(1), 75-94.
- Waitt, G. (2007). (Hetero)sexy waves: Surfing, space, gender and sexuality. In I. Wellard

- (Ed.), *Rethinking gender and youth sport* (pp. 99-126). London, UK: Routledge.
- Willis, J. W., Jost, M., & Nilakanta, R. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. London, UK: SAGE.
- Wheaton, B. (2017). Space invaders in surfing's white tribe: Exploring surfing, race, and identity. In D. Z. Hough-Snee & A.S Eastman (Eds.), *The critical surf studies reader* (pp. 177-195). London, UK: Duke University Press.
- Wheaton, B. (2013). *The cultural politics of lifestyle sports*. New York, NY: Routledge.
- Wheaton, B. (2004). Introduction: Mapping the lifestyle sport-scape. In B. Wheaton (Ed.), *Understanding lifestyle sport: Consumption, Identity and Difference*, (pp. 1-28). New York, NY: Routledge.
- Wheaton, B. (2002). Babes on the beach, women in the surf: Researching gender, power and difference in the windsurfing culture. In J. Sugden & A. Tomlinson (Eds.), *Power games: A critical sociology of sport* (pp. 240-266). London, UK: Routledge.
- Wheaton, B., & Tomlinson, A. (1998). The changing gender order in sport. *Journal of Sport & Social Issues*, 22(3), 252-274.
- Woodacre, T., Waydia, S. E., & Wienand-Barnett, S. (2015). Aetiology of injuries and the need for protective equipment for surfers in the UK. *Injury Int. J. Care Injured*, 46. 162-165.
- Young, K. (2012). Risk, pain and injury in sport: A cause or effect of violence? In K. Young's *Sport violence and society* (pp. 100-118). New York, NY: Routledge.

Young, K. (2004). Sports-related pain and injury: Sociological notes. In K. Young (Ed.), *Sporting bodies, damaged selves: Sociological studies of sports-related injury* (pp. 1-28). Amsterdam, NETH: Elsevier.

Young, K., & White, P. (1995). Sport, physical danger, and injury: The experiences of elite women athletes. *Journal of Sport & Social Issues*, 19(1), 45-61.

Young, K., McTeer, W., & White, P. (1994). Body talk: Male athletes reflect on sport, injury, and pain. *Sociology of Sport Journal*, 11, 175-194.

Young, K. (1993). Violence, risk and liability in male sports culture. *Sociology of Sport Journal*, 10(4), 373-396.

## Appendix

### Appendix I: Letter of Introduction

#### LETTER OF INTRODUCTION

Silence on 'the break': Exploring concussion in Canada's West Coast surf culture

Dr. Andrea Bundon (Principle Investigator)  
(Co-Investigator)

School of Kinesiology  
The University of British Columbia

Nikolaus Dean, Masters Student (Co-

School of Kinesiology  
The University of British Columbia

#### WHO IS DOING THE RESEARCH?

The principal investigator for this study is Dr. Andrea Bundon, Professor in the School of Kinesiology at the University of British Columbia. Nik Dean is a second year graduate student working under the supervision of Dr. Bundon.

#### WHAT IS THE RESEARCH ABOUT?

We are interested in learning about how concussion is understood by surfers from Canada's West Coast surf culture.

#### WHAT WILL PARTICIPATING IN THE STUDY INVOLVE?

If you agree to participate, you will be invited to take part in one interview (conducted in English) that will be conducted at a place of personal convenience. The interview will be approximately one hour in length. The discussions that take place will be audio-recorded and transcribed (written out word for word) for analysis. Most of the questions are fairly general. Additionally, with your permission, we may contact you for a brief follow-up meeting *if* required for clarification, elaboration, and/or to discuss the study's findings.

You do not need to talk about any issues you do not feel comfortable discussing and if you wish to withdraw from the study you may do so at any time without having to give any reason for doing so. There will be no negative consequences to you or anyone else if you chose to withdraw. This study will not subject you to any physical risk. Although we do not expect any psychological risk, in the event you would like to further discuss your feelings regarding the topics discussed in the interviews, accommodations will be made for you. We will accept participants for the study based on order of initial contact with the researcher.

#### RUMUNERATION

You will be offered a \$20 stipend for the interview as compensation for your time and any related travel costs.

### **WHAT WILL BE DONE WITH THE INFORMATION I PROVIDE?**

Any information you provide within this interview will be made anonymous. We will give you a pseudonym (fake name) and all identifying information will be removed. All interview transcripts will be kept in a locked cabinet in the office of the principal investigator and no one other than the researchers associated with this study will have access to this information. The information collected will be written-up for publication in a scholarly journal and/or presented at an academic conference.

### **WHAT IF I WISH TO WITHDRAW FROM THE STUDY?**

Your participation in the research is entirely voluntary and you may withdraw from the study at any time without having to give any reason for doing so and without experiencing any negative consequences.

### **HOW WILL THE RESEARCH BE USEFUL?**

Findings from this study will allow us to gain valuable insight into the way(s) that concussion is understood within Canada's West Coast surf culture. Moreover, findings from this study will further our understandings of concussion within different sporting contexts and will be used to educate and inform surfers and various sporting organizations.

**If you would like more information about this study or to learn how to become involved, please contact Nik Dean.**

**Thank you!**



# Are you a surfer?

If so, we would love to talk to you!



**WHAT IS THE STUDY ABOUT?** The purpose of this research is to explore how head injury and concussion are understood within Canada's West Coast surf culture.

## **YOU CAN PARTICIPATE IN THE STUDY IF:**

- You are 18 years of age or older.
- You are an experienced male or female surfer from the *West Coast of Canada* with a minimum of *five years* of surfing experience.

**WHAT IS INVOLVED?** If you agree to participate, you will be interviewed once at a location of your choosing. The interview will take approximately one hour. **You will receive \$20 for the interview as compensation for your time and any related travel costs.** [L]  
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**WHO IS DOING THE RESEARCH?** Dr. Andrea Bundon, Professor in the School of Kinesiology at the University of British Columbia and graduate student, Nik Dean.

*If you are interested in participating in the study, or would like more information, please email or call Nik.*

## Appendix III: Consent Form

### CONSENT FORM

Silence on 'the break': Exploring concussion in Canada's West Coast surf culture

Andrea Bundon, PhD (Principal Investigator)  
(Co-Investigator)  
School of Kinesiology  
The University of British Columbia  
Columbia

Nikolaus Dean, Masters Student  
School of Kinesiology  
The University of British

#### **PURPOSE OF THE STUDY:**

The purpose of this study is to explore how experienced surfers within Canadian surf culture understand the traumatic brain injury, concussion. Findings from this study will allow us to gain valuable insights on the way(s) that concussion is understood within Canadian surf culture and will further our understandings of concussion within various sporting contexts.

#### **STUDY PROCEDURES:**

You will be interviewed once at a location of your choosing by graduate student, Nikolaus Dean. The interview will take approximately one hour. With your permission, we will digitally record the interviews so that we can concentrate on what you have to say rather than on taking notes. Before the interview begins, we will also request that you complete a basic demographic questionnaire to provide us with a bit of background information about yourself and your involvement in surfing. Additionally, with your permission, we may contact you for a brief follow-up meeting *if* required. This brief follow-up meeting would be used for clarification, elaboration, and/or to discuss the study's findings.

#### **CONFIDENTIALITY:**

Your identity will be kept strictly private. Only Dr. Bundon and the graduate student (Nikolaus Dean) involved in the project will have access to the digital recordings and study documents, which will be kept in a locked filing cabinet and on a password protected computer. All data will be encrypted. No names or information that might show who you are will be used when the results of the study are reported. The results of this study will be reported in a graduate thesis and may also be published in journal articles and books.

#### **REMUNERATION:**

You will be offered a \$20 stipend for the interview as compensation for your time and any related travel costs.

## **YOUR RIGHTS:**

Your participation in the study is entirely voluntary. You may refuse to answer any question or withdraw from the study at any time without giving a reason.

## **POTENTIAL RISKS:**

This study will not subject you to any physical risk. You can refuse to answer any questions in the questionnaire package and/or withdraw from the study at any time. Although we do not expect any psychological risk, if we feel participating is placing you under undue stress we will discontinue your involvement in the study and direct you to appropriate resources. Any data collected prior to this point will be omitted from the study and destroyed.

## **WHO TO CONTACT IF YOU HAVE COMPLAINTS OR CONCERNS ABOUT THE STUDY?**

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance email [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca) or call toll free 1-877-822-8595.

## **QUESTIONS?**

If you have any questions or want further information about the study, please contact Nikolaus Dean.

## **CONSENT**

- I have read the above and I consent to being part of this study exploring surfers' understandings of concussion in Canada's West Coast surf culture.
- I have received a copy of this consent form for my own records.

Pseudonym (fake name) to be identified as in the study: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix IV: Participant Demographic Questionnaire

### DEMOGRAPHIC INFORMATION QUESTIONNAIRE

Silence on 'the break': Exploring concussion in Canada's West Coast surf culture

*The following questionnaire will ask for some background information and will be used for research purposes only. Accurate information is greatly appreciated; however, questions may be left un-answered if you do not feel comfortable providing certain information. All information recorded here will be kept strictly confidential.*

1. **Name:**  
\_\_\_\_\_
  
2. **Birthdate (YYYY/MM/DD):** \_\_\_\_\_
  
3. **Gender:** \_\_\_\_\_
  
4. **Number of years you have surfed:** \_\_\_\_\_
  
5. **Have you experienced, or think you have experienced a concussion while surfing:**  
\_\_\_\_\_
  
6. **Do you wear protective head gear while surfing:** \_\_\_\_\_
  
7. **Contact Information (E-mail Address):** \_\_\_\_\_
  
8. **Location: (Where are you currently living?):** \_\_\_\_\_

## Appendix V: Interview Guide

### **Silence on 'the break': Exploring concussion in Canada's West Coast surf culture** **INTERVIEW PROTOCOL**

*The following questions represent an overarching agenda for interviews with study participants. The questions will be pursued flexibly and may be altered and added to over time as different patterns and themes emerge in the data.*

#### **Introduction**

1. Is there anything you would like to ask me before we get started?
2. Do you give your permission to digitally record this interview so that we can concentrate on what you have to say rather than on taking notes?  
Throughout the interview I may jot down a few notes from time to time.
3. Do you have any questions about how you will be identified and/or how your responses will be used?

Outline the interview and what will be covered. Three sections

4. Can you tell me a little bit about your involvement in surfing?
  - When did you first start surfing?
  - Where do you surf most often and with who?
  - What time of the year do you surf most often?
5. How would you describe Canada's West Coast surf culture?
  - Is there a Canadian West Coast surf culture?
  - Is it a different surf culture than other areas (i.e., Australia, USA, Mexico?).  
What makes it different and/or unique?
- 5a. How would you describe a 'Canadian Surfer?'
6. Any other closing comments pertaining to the West Coast surf culture?

#### **RQ #1 How is concussion understood and constructed by surfers?**

7. Can you define concussion for me?
  - What about concussion in surfing?
  - Different mechanisms of becoming concussed?
  - Are there any long-term effects of concussion?

- 8.** Have you experienced or think you may have experienced a concussion or head injury while surfing?
- (Y) Can you tell me about your experience with the injury?
  - (Y) Can you tell me *how* you sustained the head injury?
  - (Y) How did you know you were concussed?
  - (Y) How did you go about diagnosing the injury?
  - (Y) Did you continue to surf while injured? (Why/why not?)
  - (Y) Did you tell anyone that you were injured? (Why/why not?)
  - (N) Have you observed someone sustain a concussion? (Explain)
- 9.** How would you know if you were concussed?
- How would you diagnose a concussion?
  - Yourself, concussion tool. Medical professional, coach, friend, other?
- 10.** Do you think you would continue surfing if you sustained a concussion?
- (Y): Why? (Probe at social influences pressures| Pressure from friends, coaches, sponsors) Would you conceal it? How?
  - (N): Environmental influence: What if the waves were really good?
  - (N): Social influence: Friends are out on the waves?
  - (N): External influence: Coach, trainer, sponsor?
  - (N): What if you were on a surfing trip and you only had a few days?
- 11.** How might your friend group (surf crew) respond or react to you if you disclosed that you think you may have sustained a concussion?
- Would these interactions influence your decision to keep surfing or not?
- 12.** Do you or other surfers, here in the West Coast of Canada, talk about concussion?
- (N) Why do you think no surfers talk about concussion and head injury?
- 13.** Have you ever surfed while injured?
- (Y) Can you explain the injury and how you handled it?
  - (Y) Did you attempt to downplay the injury or conceal it?
  - (N) Why do you choose not surf while injured?
- 14.** What sources do you get your surfing information from? (i.e., wave reports, equipment, clothing, news)
- (Y) Do these sources have information on injury (concussion/ head injury) and preventative manners?
  - (Y) Can you explain what the information was and possibly direct me to it?
  - (N) If there was information and educational tools on concussion and preventative manners would you engage with it? (Why/why not?)
- 15.** Why don't you wear protective headgear in surfing?
- Do you ever think helmets will be a 'thing' in surfing?
  - Probe at the aesthetic side of the 'look'

- 16.** Do you think surfers should be concerned about concussion/head injury in surfing? (Why/why not?)
- (Y) What could be done to raise more awareness on the severity of head injury in surfing?
  - (N): Why not? (Studies have shown that head injury is quite common?)

**RQ#2 Do surfers' gender and perceptions of risk affect the way(s) that they understand concussion?**

- 17.** Have you found yourself in a situation where you were at risk of concussion while surfing?
- (Y): Can you describe the situation and how you handled yourself?
  - (N): Can you think of an example where one may be at risk of a concussion while surfing?
- 18.** Who would you consider to be at the greatest risk of sustaining a concussion while surfing?
- Does age, gender, SES, skill level influence this?
- 19.** Whose role is it to inform surfers about risks, and risks of head injury/ concussion in surfing?
- 20.** Do you think male and female surfers may handle their concussions differently? (Can you give an example or personal experience?). Why/why not?
- 21.** Are different surf locations more risky than others? (Can you provide some examples of riskier surf locations here on the West Coast?)
- What makes a certain location risky?
  - What about remoteness to some of these areas particularly here, on the West Coast?
- 22.** Do you think about your safety while surfing?
- (N) How come? What about other peoples' safety?
  - (Y) How so? Does it impact the way that you ride, or where you ride?
  - Protecting your head?
  - Do you take any steps to avoid injury and risky situations while surfing? (Can you give an example?)
- 23.** Do you have any closing comments pertaining to concussion in Canada's West Coast surf culture?