Medical Care in Combat Sports: Team-Doctoring and the Case Study of Concussion

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Publications

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Abstract

The purpose of this thesis is to explore how combat sport athletes think about, understand and manage their experiences of pain, injury and medical care. While some research provides interesting accounts from the perspective of ringside medical staff, there is no work which considers these experiences from the perspective of fighters. Considering that 'fight medics' are often outsourced and usually only present during competitions, the lack of dedicated medical support outside these settings may result in fighters being more likely to engage in 'team-doctoring' – a term used to describe athletes seeking medical advice from teammates and coaches. This process is yet to be theorised and empirically described. This thesis, therefore, aims to explore team-doctoring by considering sociocultural interactions, norms embedded within combat sport subcultures and the role each plays in shaping fighters' experiences. This analysis is further advanced by examining combat sport athletes' understanding of concussion which appears to be an interesting case study from which to explore some of the potential limitations of team-doctoring.

The data for this project was collected through field observations at combat sport gyms and fight events and semi-structured interviews with fighters from a variety of combat sport disciplines. In so doing, this study defines team-doctoring as a process whereby apparent medical knowledge is (mis)understood, recommended, transferred, interpreted, embodied and developed within a somewhat coherent team. Further investigations highlighted clear limitations within this process, which influenced how fighters understood and managed their experiences of (ill)health. This not only revealed several misconceptions that normalised and reaffirmed risky body practices within their sport but was also the basis from which fighters rejected seeking advice and treatment from qualified medical professionals. Contextualising team-doctoring offers continuing insights into the complexities that lie within athletes' understandings, which, when further developed, can serve as useful components of future recommendations for policy and practice.

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Chapter One – Introduction

1.1 Positioning the Study: Risk, Pain, Injury and Medical Care in Sport

Young (2004, p.19) has described the ubiquity of risk, pain and injury in sport as an "unthwarted epidemic". A number of sociologists argue that sport often occurs in socio-cultural contexts that foster the acceptance of physical harm and the normalisation and valorisation of pain and injury as a routine aspect of participation (Frey, 1991; Hughes and Coakley, 1991; Malcolm and Sheard, 2002; Nixon, 1992; 1993; Sabo, 2004; 2009; Theberge, 2008a; Young, 2004). The pervasiveness of these ideas contributes to the willingness of athletes to play through pain and injury in the pursuit of competitive success. It is in these spaces that many athletes come to understand their sport-related experiences with pain and injury as physical and symbolic cues of what makes them 'athletes', where pain tolerance and the disregard of bodily limits are often celebrated and seen as reflections of merit and competitive edge. Hughes and Coakley (1991) argue that a sportsperson's athletic identity is contingent on overconforming to the 'sport ethic', which is based on a set of value systems that are broadly accepted as key components of what it means to be a 'real athlete'. In this regard, these value systems often become a common part of the athletes' sporting experience. The ways that athletes may overconform to the sport ethic vary across different sports cultures and ability levels. It does appear from various studies that combat sports represent one such cultural space with specific patterns of the sports ethic that cause damage to bodies and brains (Burke, 2022; Channon, 2020; Green, 2011; Lenartowicz, Dobrzycki, and Jasny, 2023; Matthews, 2020). Yet, while there have been several studies examining this cultural component of combat sports few have examined athletes' perceptions of, and responses to, injury and their reasoning in terms of seeking medical help, advice and treatment.

The normalisation of pain and injury is a culturally normative process within many sporting spaces. Nixon (1992) argues that this 'culture of risk' is mediated to athletes via structural networks called 'sportsnets' (typically composed of coaches, managers, athletic administrators, and medical staff) that reinforce cultural and interpersonal messages which normalise experiences of pain and injury in sports. To Nixon (1992), it is the structural

characteristics of these sportsnets along with the interpersonal interactions amongst its members that impact an athlete's willingness to play through pain and injury. It appears then, that one of the many consequences of being embedded in social spaces that value such ideas (i.e. 'sport ethic', 'culture of risk') is that athletes tend to 'insulate' themselves from seeking medical attention, despite the presence of medical professionals in most competitive sport settings (Hughes and Coakley,1991; Kotarba, 1983; Nixon, 1992; 1993, Roderick, 2006).

In this regard, several academics have expressed the importance of exploring the types of risks athletes take and the circumstances under which they take them (Andreasson and Johansson, 2018; Atkinson, 2019; Lenartowicz, Dobryzycki and Jasney, 2023; Madrigal and Robbins, 2017; Malcolm and Sheard, 2002; Malcolm, 2006; 2009; Roderick, Waddington and Parker, 2000; Roderick, 2004; Safai, 2003; 2004; Theberge, 2008a; Walk, 1997; 2004). A key dimension in these studies has been medical care surveillance in sport. As such, the involvement of medical professionals in the provision of health care and in athletes' experience within the culture of risk has been thoroughly examined. Collectively, this work provides valuable insights into the different relationships athletes (in a variety of sport settings) possess with their respective medical care providers (and vice versa). They also considered how such relationships affected the medics' ability to negotiate different options of treatment in addition to the athletes' own perceptions of dealing with pain and injury. In particular, Safai (2003; 2004) and Walk (1997; 2004) provide evidence of the variety of ways in which the considerable health risks associated with performance sport might be countered. Where the interpersonal relationships the athletes established with their healthcare providers have influenced them to reconsider, and to some extent, disaffiliate from the health compromising practices that dominate their sports.

While there have been several studies examining how athletes seek medical attention for contact sport injuries (Malcolm,2006; Roderick, 2006; Waddington and Roderick, 2002), most frequently these studies have focused on sporting settings such as professional rugby and football where dedicated medical support is paid for by the organisation and readily available to athletes. Fewer studies have focused on amateur settings (Charlesworth and Young, 2004; Liston et al., 2006 ; Pike, 2005; Thing, 2004) and while the seeking of medical attention in some martial arts and combat sports (MACS), particularly those that have taken on a

'Western' codified structure, has been recently researched, this work focuses on medical care which is only transiently available at competitions and provided by medical personnel who are largely unknown to the athletes (Channon, Matthews and Hillier, 2020a; 2020b; 2021). Thus, little is known about the ways in which athletes in MACS might seek medical care outside of these brief interactions. And given the extant aim of such competitions – to physically contact one's opponent and to cause some, potentially serious, forms of physical damage to their bodies – such sporting spaces seems to provide an excellent opportunity within which to examine how athletes respond to and perceive injury, seek help and advice, and decide whether or not to continue training and/or competing.

1.2 Research Aim

Working within this cultural framing of sport, a common feature in the studies described above is the presence of healthcare professionals. Indeed, the bulk of this work has largely focused on elite and competitive sport settings that have access to a form of sport-affiliated medical support. Prompted by a degree of logical inference, this thesis asks a fundamental question: If the current sociological literature suggests that the 'culture of risk' is predominantly countered via interpersonal negotiations with medical staff, what happens in competitive sports, such as MACS, where athletes do not have a medical 'team behind the team' as part of their sportsnet? Apart from Pike (2005), very little scholarly attention has been given to the fact that some sports lack access to medical support within their club. Safai (2003) suggests that in the absence of formal medical care, athletes are more inclined to seek 'medical' advice for their injuries from teammates and coaches through what she termed as 'team-doctoring'. However, the process of 'team-doctoring' is yet to be thoroughly theorised and empirically described. Such interactions may influence the ways in which athletes understand and manage their sport-related experiences with pain and injury. This thesis aims to empirically examine the process of team-doctoring by exploring how combat athletes think about, understand and manage their experiences with risk, pain and injury as a point of departure. More specifically, I was interested in the athletes' sources of 'medical' knowledge in a space that is relatively isolated from formal medical care. Especially since, as Nixon (1992)

suggests, 'biased support' from members within the sportsnet meant that athletes were less likely to challenge the normalised occurrence of risky body practices within their sport.

1.3 Thesis Outline

Chapter Two begins by highlighting some key issues associated with the medicalisation of the athletic body and the organisational nature of sports medicine. This prompts an in-depth discussion of the performance ideologies that dominate most competitive sport settings. Here, the relationship between risk, pain and injury in sport is considered against a backdrop of established sociological literature. Within this, athletes' tolerance and acceptance of injury as a normal part of their sport participation and their implicit and explicit engagement in health compromising practices is further examined. In particular, the role of 'sportsnets' in perpetuating and reinforcing the 'culture of risk' is described. As means of further contextualising this process and how it relates to ideologies of performance and medical care contexts, a tentative typology of medical relationships in sport is proposed. This helps to situate the importance of exploring team-doctoring as a 'foreshadowing problem'. Related to this, I outline the role of lay experts in medical sociology. The chapter concludes with a discussion of the specific organisational distinctiveness of MACS and outlines a case example of concussion and associated brain injuries, as a useful means of considering these issues in more detail.

Chapter Three outlines the methodological considerations and procedures that inform this thesis. It starts by explaining the ontological, epistemological and methodological positions within philosophical paradigms, as means for situating this study within the realms of qualitative enquiry. Following this, a brief description of the contemporary treatment of reflexivity within social research is considered. Then, a detailed discussion of the research process commences. Within this, the data collection methods employed – field observations and semi-structured interviews – are also detailed. After this, some ethical considerations are discussed.

The findings in chapters Four and Five, present and analyse the data collected throughout this thesis. These chapters address the study's main aim of exploring the process of team-doctoring. In particular, they detail how fighters and their coaches understand and develop apparent medical knowledge and care in social spaces where professional medical support is largely absent. These chapters contribute to the current sociology of sport literature by providing a qualitative analysis of combat sport athletes' experiences of (ill)health, injury and medical care.

Chapter Four focuses on empirically exploring, describing and contextualising the process of team-doctoring in combat sports. Key in this regard, is the role of coaches in mediating the process, in which they occupied a central position in perpetuating cultural messages and practices that implicitly and explicitly encourage their fighters to accept, rationalise and engage in health compromising behaviours. Given this, and the lack of access to affiliated medical support, the participants predominantly relied on seeking lay 'medical' advice from their coaches for managing their experiences with pain and injury. Upon examining how the participants go about seeking coach-led team-doctoring, limitations within the coaches' lay 'medical' expertise become more apparent. It was important to consider how these limitations begin to shape the fighters' understanding of their sport-related 'illness' experiences, as these understandings often formed the basis from which they rejected seeking formal medical treatment. Overall, as detailed in Chapter Three, this helps frame the "subsequent lines of enquiry" (Prus, 1996, p.132) that inform the following finding chapter.

Within discussions about the frequent injuries obtained from their sport participation and the fighters attempts to manage them, the participants tended to attach contradictory meanings to symptoms commonly associated with head injuries and concussion. Leading on from this, Chapter Five begins to explore fighters' understandings of concussion. Here, Atkinson's (1984) discussion of the interdependence of 'uncertainty' and 'certainty' is considered to help contextualise this analysis. This was also advanced by drawing on Schutz's (1970) phenomenology of expertise, where an additional 'ideal type', the 'expert' on the street, is proposed in order to understand the social construction of concussion knowledge within combat sport gyms. The chapter concludes by highlighting the expressions of uncertainty displayed by fighters once they begin to think about brain injuries beyond performance-

oriented ideas. This chapter's empirical focuses helps to demonstrate some important limitations in the process of team-doctoring.

Chapter Six concludes the findings presented within this thesis. It begins by providing an overview of the research aims before addressing the empirical, methodological and theoretical contributions of this study. Namely, I reiterate how team-doctoring can be utilised as a conceptual tool for analysing athletes' understandings of (ill)health. This is followed by a critique of the inflexible methods used in recent research that explores athletes' behaviours and attitudes towards concussion. Here a description is included of how the methodological procedures employed in this project can help account for the nuances and complexities that lie within the participants' understandings of concussion.

Chapter Two: Literature Review

2.0 Introduction

This chapter begins by defining and outlining the process of medicalisation more broadly before examining the issues associated with the medicalisation of the athletic body through the practice of sport medicine. This definition and outline provided the basis upon which the performance ideologies and medicine within the sociology of sport were reviewed. Within this, key sociological concepts that shape athletes' perceptions of sport-related risk, pain and injury were discussed. Building up on this, a tentative typology of medical support within academic literature was proposed. This is followed by outlining elements of the organisational distinctiveness of MACS and more specifically by exploring the case of concussion and brain injuries in those spaces. Which highlighted significant observations that help position the present study. As an outcome of this, research on the construction of lay knowledge and the limits of lay expertise were examined. Here, Fleck's (1935] 1979) concept of 'thought collectives' and links to its theoretical utility within this study were considered before concluding the chapter.

2.1 Medicalisation in Sport

Several scholars (Conrad, 1992; Illich, 1976; Larson, 1978; Pitts, 1968; Zola, 1972) have argued that modern medicine is increasingly becoming an 'institution of social control'. This process was associated with the 'medicalisation' of 'ordinary' aspects of everyday life, "making medicine and the labels 'healthy' and 'ill' relevant to an ever increasing part of human existence" (Zola, 1972, p.487). This has led to an increase in the range of human conditions which are held to constitute 'medical problems' that need medical intervention (Waddington, 2000). Although much has been written about medical social control since the late 1960s in terms of medicalisation, its definition has not been articulated clearly. This is largely because many of these early studies (see Illich, 1976 and Zola, 1972) viewed medical professionals as the key to understanding medicalisation. However, it soon became clear that medicalisation was more complicated than the elaboration of new 'medical problems' by physicians and the

medical profession more broadly (Conrad, 2007). Therefore, while medical professionals have historically been central to medicalisation, patients and other lay people can be active participants in the medicalisation of their problems (Arksey, 1994; Becker and Nachtigall, 1992; Brown, 1995; Freidson 1960; 1970; Pols, 2014; Prior, 2003; Riessman, 1983).

Considering this, Conrad (1992, p.211) argues that the key to medicalisation is definition, in that it comprises "defining a problem in medical terms, using medical language to describe a problem, adopting a medical framework to understand a problem, or using a medical intervention to 'treat' it". Thus, when considering medicalisation, it is important to recognise that "an entity that is regarded as an illness or disease is not *ipso facto* a medical problem; rather, it needs to become defined as one". In other words, medicalisation occurs when a medical term is used to describe or address a problem. This process may or may not include medical professionals, lead to medical treatment, and/or result in the 'purposeful' expansion of the modern medicine through medical social control (Armstrong, 1995; Conrad, 2007; Klawiter, 1998). While the term literally means 'to make something medical', it has been largely used in the context of a critique of medicalisation or overmedicalisation (Malcolm, 2017).

One of the main concerns with the medicalisation of society is "the pathologization of everything" (Conrad, 2007, p.148), mediated through the development, promotion and application of medical categories for previously nonmedical problems (Brown, 1995; Conrad, 2000; 2007; Hadler, 2004). While medical discourse and jurisdiction are important components of this process, the development of surveillance medicine has justified expanding medical intervention in an effort to improve people's lives (Armstrong, 1995; Conrad, 2007; Waddington, 2000).

The medicalisation process has also encompassed the world of sport, mainly through the "healthitization" of society (i.e. utilisation of sport for health promotion) (Conrad, 1992, p.223) and routine medical supervision of athletes, irrespective of the presence or absence of any specific pathology or ailment. Malcolm (2017, p.88) suggests that "the link between sport and health – the sport–health ideology – is one of the more enduring human beliefs". While Waddington (2000) identifies the historic and cultural ubiquity of these ideas dating

back to the Ancient Greek societies, this ideological standpoint was noticeably accelerated by what came to be called the obesity epidemic (Gard, 2010; Gard and Wright, 2004; Kohl et al., 2012; Piggin and Bairner, 2016). This intersection of sport, medicine and health has become increasingly evident in recent years through government attempts to persuade the population to become more physically active (Crisp and Swerissen, 2003; Milton et al., 2020; Malcolm, 2017; Chin, Kahathuduwa and Binks, 2008). However, the awareness of the health benefits of taking part in regular physical activity was not only widespread but often confused by the invariable conflation of sport, exercise and other aspects of daily living (Fox and Hillsdon, 2007; Malcolm, 2017). In this regard, Waddington (2000) argues that sports medicine is largely responsible for the reproduction of ideas linking sport and health.

While public perceptions and policies tend to conflate sport, exercise and physical activity, the type of social relations which characterise those activities as health-promoting have very different health outcomes to the organised, competitive, and physical nature of sports (Malcolm, 2017; Martinková, 2008; Österlind and Wright, 2012; Russo and Spinelli, 2010; Theberge, 2008a). Waddington (2000) usefully connects these sport-related developments with the broader concept of medicalisation. His analysis of the development of sports medicine literature illustrates how athletes have become defined as a distinct population whose need for continuous medical support is akin to the needs of the chronically ill through the widespread acceptance of the idea that "athletes require routine medical supervision, not because they necessarily have a clearly defined pathology but (…) simply because they are athletes" (Waddington 2000, p.121). Athletes and sport organisations, moreover, have not simply welcomed these developments but have actively sought to increase their access to medical interventions in the search for performance edge and competitive success.

In his analysis of the development of sports medicine and the emergence of sport specific medical personnel, Hoberman (1992) argues that performance enhancement is understood as an 'inherent logic' within sports medicine. Similarly, for Waddington (2000, p.141) the joining of these relatively autonomous processes accounts for the contemporary manifestation of sports medicine in which performance-enhancement has "become an important part of the raison d'être". As such, a distinct feature of medical practice in sport is the prominence of performance concerns. In this regard, Malcolm (2017) argues that elite

sport utilises science and medicine in the pursuit of competitive success and has become increasingly dependent on medicine for its effective functioning. As Edwards and McNamee (2006) noted, the breadth and scope of the tasks and functions encompassed within contemporary sports medicine represent a considerable departure from the 'essential' defining goal of medicine – the relief of human suffering and the restoration of health. Here then, the degree to which medicine could be said to be practiced differently in sports contexts was, and more broadly is, most evident when performance principles begin to override health concerns.

This has led sociologists of sport to examine the provision and delivery of medical care by sport-specific medical personnel in contemporary sporting contexts. For example, Theberge (2008a) provides further insights into the medicalisation of the athletic body by exploring the clinical practice of sports medicine within Canadian high performance sport systems. In particular, she contends that the competitive pressures (primarily driven by performance concerns) within elite sports have led to a consumer-orientated mode of clinical practice. This is largely comprised by giving way to treatment options that in other clinical contexts would be deemed as unnecessary or a 'quick fix'.

Theberge (2008b) further argues that the incorporation of chiropractors into sport medicine teams (and sports medicine more broadly) is one manifestation of this athlete-focused medical practice. Given the historical tensions around their place within a system of health professionals, their inclusion and scope of practice was often contested by other sport medicine practitioners (Day, 2010; Theberge, 2008a; 2008b; 2009). Although Chiropractic is now established within the system of sport medicine professions, concerns about efficacy and scientific legitimacy continue to figure prominently in deliberations about the place of this profession in the programming of health care for athletes. Theberge (2012) further evidenced a similar debate within her examination of the established presence of massage therapy within sports medicine where its inclusion was on the basis of individualised preferences of athlete-patients rather than evidence-based knowledge. Linked to this, Faulkner et al. (2017) argues that the client-based focus of sports medicine has placed occupational pressures on medical practitioners in elite sports to incorporate controversial 'unorthodox' biological

therapies because the athletes requested them. This is an example of how 'client control' (Freidson, 1960) can sometimes overstep medical jurisdiction in sports medicine.

Similarly, Scott and Malcolm (2015) note how sport medicine's client-centered practice has allowed physiotherapists to experience greater autonomy within multidisciplinary teams in British Olympic sports. Here, the physiotherapists' working traditions and treatment approaches were favoured by their athlete-patients because they closely aligned with their performance orientated needs (See Malcolm, 2006 and Theberge, 2009 for similar discussions). The physiotherapists interviewed in this study stated that their involvement in every step of the treatment process (e.g. rehabilitation, prevention and management of injury), and the trusting relationships they have established with the athletes throughout, meant that they provided the majority of healthcare within such settings. This not only extended their occupational tasks, but in certain situations allowed them to display considerable autonomy relative to doctors. Indeed, the doctors acknowledged their respective skills and often deliberately deferred to physiotherapists for their expertise (Scott and Malcolm, 2015; also see Malcolm and Scott, 2011 for a detailed discussion). Such inter-professional and non-hierarchical collaborations between healthcare providers was normalised and understood as a fundamental characteristic for the successful running of multidisciplinary teams. However, despite that, the physiotherapists' relative autonomy remains, in some important ways, constrained by the traditions of medical dominance, particularly in relation to the doctors' ability to access a wider network of medical relations (e.g. referrals) and gatekeeping of medical treatments (e.g. prescriptions) (Scott and Malcolm, 2015).

Issues around the valuing of expertise, especially as this relates to lay experience, will be returned to below, as will further details that highlight the peculiarity of sporting spaces and athletes' roles in medical care, especially when no medical professionals are present. What these earlier studies examining the provision of medical care by medical professionals in sporting settings with funding illustrate, is how athletes can demand the inclusion of professionals who at one stage had been considered as 'complementary', such as chiropractors, and that athletes can demand more support from professionals that they perceive to be of greater value, such as physiotherapists. While these studies are pertinent

to understanding how athletes seek support for medical concerns, they are only of limited value because, on the whole, dedicated medical support is generally unavailable in combat sports and other non-funded sport settings - a point detailed below. In fact, there is considerably less literature examining how athletes seek support for their pain and injury experiences in sport settings that lack access to dedicated medical care and this is an important gap in knowledge that this thesis seeks to address.

2.2 Sport, Performance Ideologies and Medicine

Many scholars have argued that sport often occurs in a cultural context that can serve to normalise and glorify risk, pain and injury (Frey, 1991; Hughes and Coakley, 1991; Malcolm and Sheard, 2002; Nixon, 1992; 1993; Sabo, 2004; 2009; Theberge, 2008a; Young, 2004). Athletes who are seen to endure pain at a high threshold are frequently praised and gain status from coaches, respected sports figures, media and the general public; whereas athletes who submit to pain and/or injury are often stigmatised (Malcolm, Scott-Bell and Waddington, 2017; Nixon, 1993; Waddington and Roderick, 2002; Walk, 1997; 2004). Within this social context, such ideas are frequently normalised and embodied by athletes as prerequisite values of what makes a 'real athlete' (Hughes and Coakley, 1991). This notion justifies what Sabo (1986) called the 'pain principle', which he later argues can be understood 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 presumed to be required to establish self-worth, social acceptance, and social gains (Sabo, 2004, p.64).

In this case, athletes' perceptions of pain and injury are shaped by the pain principle, wherein they sacrifice their bodies to attain merit and competitive success (Sabo, 2004; 2009).

Hughes and Coakley (1991) suggest that one of the reasons why athletes prioritise risk and injury over well-being is an outcome of over conformity to a 'sport ethic'. The sport ethic, which is a set of codes that dominate performance sports settings, is built on four beliefs:

making sacrifices for the game; striving for distinction; accepting risk and playing through pain; and challenging limits (Hughes and Coakley, 1991). As a result, some athletes tend to recognise these codes as physical and symbolic cues that shape their athlete identity, where the disregard of pain and bodily limits is often reflected as a symbol of strength and character (Safai, 2010).

Echoing Hughes and Coakley's (1991) sport ethic, Nixon (1992) proposed the notion of a 'culture of risk' in sports in order to understand how social and cultural factors can influence athletes' pain and injury decisions, experiences and perceptions. As such, the culture of risk demonstrates the widespread acceptance and normalisation of playing through pain and injury, where it indirectly implies that an athlete should endure injury as much as possible and at the same time recover from injury as soon as possible. To Nixon (1992, p.127), this culture of risk is effectively mediated to athletes via a structural network that reinforces "cultural and interpersonal messages exhorting or encouraging them to play with pain or injuries" called the "sportsnets". He uses this term to refer to "webs of interaction that directly or indirectly link members of social networks in a particular sport or sports-related setting" (Nixon, 1992, p.128). Sportsnets may be composed of "coaches, managers, medical staff, other athletes, spectators, administrators, and investors in sports clubs" (Malcolm and Sheard, 2002, p.150).

Nixon (1992; 1993) suggests that members of the sportsnet 'conspire' to instil norms and values that pressure athletes to play through pain and injury by promoting symbolic messages that rationalise the acceptance of risk. Walk (1997, p.24) suggested that one implication of Nixon's work is that "medicine is practiced differently, more competently, and/or more ethically in non-sports contexts". For example, in his ethnographic work in a professional rugby union club, Howe (2001) suggested that the coaching staff manipulated the sports medicine team to convince some players that their pain does not exist, and therefore they should play. This 'risk transfer' and 'biased support' is communicated to athletes as 'part of the game' in order to reduce the uncertainties faced by those who control the sportsnet (Nixon, 1992). Here then, athletes are conditioned to limit, block, deflect or discredit anyone that challenges this process of 'institutional rationalisation' (Nixon 1992; see Nixon, 1993 for more detail). Hence, athletes' efforts to deal with risk, pain and injuries are likely to reflect

beliefs from the culture of risk held by prominent members of their sportsnet (Nixon 2004; Waddington, 2012; Young, 2004).

Nixon (1992) argued that when network relations within a sportsnet are larger, closer, denser, more centralised, higher in 'reachability' (to prominent members) and relatively homogenous and stable, athletes are more likely to be deeply embedded in an environment that fosters health-compromising behaviours. Membership of such sportsnets works to instil norms and values that pressure athletes to play through pain and injury. Furthermore, Liston et al. (2006, p.392) also noted that even in a "relatively small, loose and not highly centralized" sportsnet, athletes could still become normalised to the notion of "playing hurt".

Conversely, several sociologists interested in medical care of athletes have demonstrated how greater flexibility, heterogeneity and looseness in the social formation of sportsnets can result in participants aligning less completely with the risk-taking and health-disregarding norms (Killick et al., 2012; Malcolm, 2006; 2009; Safai, 2003; 2004; Walk, 1997; 2004). For example, Walk (1997; 2004) showed that some student athletic trainers (SATs, analogous to physiotherapists in the UK) formed close friendships with players, which enabled them to undermine the 'exploitative' tendencies of sportsnets. Similarly, Safai (2003) concluded that the 'culture of risk' that dominated elite collegiate sporting environments could be countered by a 'culture of precaution' and 'sensible risk taking' which helped coaches and athletes resist the promotion and tolerance of injury.

Yet, Waddington (2012) argues that while the empirical work by Walk (1997; 2004) and Safai (2003) makes a useful contribution to the subject, their critique of Nixon's (1992) work appears to be largely based on an oversimplification of his argument. It is clear, for example, that there may be considerable variations from one situation to another in terms of the degree to which athletes are constrained to continue playing with pain and injury, or in terms of how much information sports physicians convey to (or withhold from) athletes about their injuries and the associated risks (Waddington, 2012). However, these empirical variations in the structures of sportsnets do not undermine Nixon's (1992) overall argument, as he explicitly recognises that sportsnet are likely to vary in significant respects.

As mentioned earlier, Nixon (1992) identifies a number of structural characteristics that are likely to account for the variations that Walk (1997; 2004) and Safai (2003) take to be 'inconsistencies' of the sportsnet thesis in their own findings. Walk and Safai's empirical work suggests that clinicians in collegiate sport settings are less likely to deviate from what is considered as good medical practice. The sportsnet depicted by Walk (1997; 2004) is characterised by young SATs that work on temporary basis (as part of an internship programme) that received little or no pay for their work. Because of that, some SATs harboured a strong sense of resentment towards the programme. Which often led them to "resist the demands that were placed on them" by key members of their sportsnets (Walk, 1997, p.32). On a more theoretical level, Waddington (2012) argues that the existence of 'transitory' members within the sportsnet described by Walk is characterised by, in Nixon's terms, a low level of centralised control, homogeneity and stability. As such "Nixon's framework would lead us to predict, as Walk's data indicate, that sports clinicians working in such settings are less likely to be implicated in health-threatening practices" (Waddington, 2012, p.216).

Similarly, Safai (2003, p.131) noted that intercollegiate sport in Canada "tend to play with less pronounced pressures on success and revenue" compared to professional sport and some collegiate sports in the United States. Considering this, the institution where her study was conducted "positions sport participants primarily as *student-athletes*" (Safai, 2003, p. 138, emphasis in original). Safai (2003, p.143) also noted that the clinicians' behaviour in this study was "influenced by the clinic's location in an educational and health-oriented administrative unit.". This suggests that the clinicians' main duty is to ensure the safety of the 'student' before the 'athlete'. In this case, it is reasonable to argue that the culture of precaution might be more pronounced in comparison to other elite sporting environments. This was most evident in the fact that clinicians and student-athletes did not necessarily align with key dimensions of the 'culture of risk' and instead often erred on the side of caution in relation to pain and injury. As such, Safai's (2003) description of the context within which this clinic is situated suggests that the clinic, in Nixon's terms, is not as closed and insulated from the university's broader policy goals where health and wellbeing are prioritised and valued.

In line with this, Nixon (1992) also considered the influence of "athletic subcultures" in the reinforcement of the culture of risk within the sportsnet. Here, athletes often find themselves in a subculture that inherently shares a set of normative cultural beliefs that convey implicit and explicit messages about risk, pain, and injury (Nixon, 2004). The earliest account of this was in Kotarba's (1983, p.151) study of chronic pain among professional athletes. His conception of athletic subcultures was based on "a social network utilised by professional athletes to 'make sense' of illness and injury problems in confidence". Specifically, he found that athletes – with similar experiences and problems – played a vital role in circulating information and methods that pertain to disguising pain and returning to play as quickly as possible. This is an example of lay knowledge passing between athletes in order to assess and manage their pain and injury. There was a social structuring to this knowledge which resulted in players who submit to pain and/or injury often becoming stigmatised. In this regard, the athletic trainers in Kotarba's (1983, p.159) study categorised players as "gamers" and "nongamers". They preferred to deal with 'gamers' because they consulted them when they were 'really in pain'. In turn, they tended to avoid 'nongamers', because they were perceived as malingerers.

Also, athletes respected each other's physical experiences and, with a sense of empathy, shielded fellow athletes' true extent of injury from the sportsnet, as they were aware of the determents it would have on their athletic careers (Kotarba, 1983). Hence, they were more likely to seek 'lay diagnosis' from one another in order to manage and assess the severity of a pain or injury problem. This often led them to consult alternative health sources outside their sportsnet. Kotarba (1983) noted that this type of advice was typically sought when an athlete distrusts the health care provided or thinks that the athletic trainer over-diagnosed their condition. The athletic subculture represented here, could be described as an athlete specific sportsnet, characterised by extreme levels of trust, confidentiality and camaraderie (Kotarba, 1983).

Another key dimension of the processes described above is the athletes' embodiment of these social norms (Barker and Baily, 2015; Matthews, 2020; Paradis, 2012; Sparkes and Smith; 2002; Wright, 2018; Wainwright and Turner; 2004). Matthews (2020, p.7) argues that "athletes develop their understanding of 'normal' ways to consider violence, pain and injury

within their sports through their bodily negotiations and repeated physical interactions with such ideas". This means that their embodied experiences, when embedded within routine bodily actions, symbolically align with the performance ideologies that dominate their sport. For example, Liston et al. (2016) argued that the normative aspects of the culture of risk in Rugby has led players to display a distinctive irreverence toward concussion. By being "head strong", the players' embodied experiences with concussion were largely "managed by downplaying, denying or concealing its symptoms and 'playing on'" (Liston et al., 2016, p.676) – the topic of concussion is returned to below as a means of further detailing the specifics of medical knowledge and treatment in spaces without medical professionals present.

These iterative bodily negotiations "could form the basis from which [athletes] produce culturally specific competent bodily actions" (Matthews, 2020, p.15, emphasis added). Over time, these culturally-coded routine bodily performances become normalised, reiterated, and reified (Matthews, 2016). Recognising this demonstrates that knowledge is also embedded in embodied practices (Pink, 2011). However, Crossley (2007, p.83) argues that "culturally appropriate bodily action and coordination 'just happens' and falls below the threshold of perception and reflective knowledge", which is why sometimes in action, embodiment is largely absent from conscious considerations of experience.   In a sports context, this means that when athletes reach a certain level of embodied competence, they become less aware of their bodies. Such embodied forms of knowledge are "embedded in cultural contexts where they have a symbolic significance, are normatively regulated and perhaps also 'rationalized'" (Crossley, 2007, p.86). The problem, however, is when these 'competent body actions' are coded by performance ideologies that normalise, rationalise and glorify risky attitudes towards the body.

As such, accounting for these forms of knowledge is essential in understanding why athletes continue to engage in health compromising practices that are otherwise not easily captured in 'spoken words'. According to Matthews (2020), such bodily negotiations can also help explain athletes' rejection of 'outsider' (medical) knowledge. This rejection is in part picked up by Allen-Collinson and Hockey's collaborative autoethnographic work of chronic injury in distance running (Allen-Collinson, 2005; Allen-Collinson and Hockey, 2007) which argues that professional medical diagnosis and treatment was sought out of 'desperation' or as a 'last

resort'. After their initial attempts at self-managing their respective injuries were unfruitful and their pain began to encroach into their everyday life (outside of sport), they consulted an array of health care practitioners, all of which offered different and conflicting diagnoses (see Allen-Collinson and Hockey, 2001 for a detailed discussion of this process). However, they felt obliged to "abandon the biomedical pathway" after not observing any discernible improvement in their respective conditions (Allen-Collinson, 2003, p.385). Frustrated with what they considered to be the ineptitude of the healthcare professionals they encountered, their misplaced trust in them and their inability to recover back to their pre-injury status, they embarked on their own self-devised rehabilitation programme. This was based on an extensive review of self-help literature on sport injuries, informal advice from seasoned athletes along with their experiential knowledge as long distance runners.

Similarly, Malcolm and Pullen (2020) argue that 'grassroot' athletes in the UK rarely sought medical help for their sport-related pain and injury. This is because their experiences with healthcare professionals were replete with a sense of frustration at their lack of ability to effectively diagnose and treat their conditions in a timely manner. The athletes interviewed in this study believed that their sport-related conditions were not taken seriously by healthcare professionals because they were perceived as 'self-inflicted' and thus thought that their care was not intended for them. This has led most of the participants to resort to private medical care which often resulted in unresolved and unsatisfactory outcomes. Considering these preconceived understandings about professional healthcare, the athletes preferred to manage their pain and injury through self-treatment and lay diagnosis. Notwithstanding the 'culture of risk' (Nixon, 1992), this coping strategy has led some of their relatively minor injuries to develop into chronic conditions as their experiences become more informed by lay 'medical' knowledge (Malcolm and Pullen, 2020).

This growing distrust in medical professionals was also evident amongst triathletes (Atkinson, 2012). In *Doctors Without Degrees*, Atkinson (2012) highlights the participants' entrenchment in "impressively disciplined and decisively pathological" (p.267) self-customised ethnopharmacological practices that are specifically designed to enhance their athletic performance. The athletes in this study valorised their own tried and tested first-hand experience and knowledge, and that of other trusted athletes, over scientifically legitimated

evidence about nutrition and sports performance. Atkinson (2012, p.279) argues that "the manners by which athletes are replacing real with fake foods mirrors and dovetails with the processes by which sports doctors, nutritionists and others are being replaced as hegemonic "experts" in sports contexts". Indeed, the participants seldom mentioned medical professions when discussing their meticulous nutritional strategies, and when they did, they were overlooked as "mere commodities" (p.276) that provide basic information. Consequently, the 'do-it-yourself' aspect that predominates in triathletes' diets, and the ways in which they tend to avoid advice from medical 'outsiders' illustrates how 'pseudo' medical knowledge has a considerable cultural capital in triathlon subcultures (Atkinson, 2012).

These studies that have focused on 'sportsnets', 'culture of risk' and 'grass-root' athletes are of value in understanding how both medical and non-medical support may be sought in sports that are not funded sufficiently to allow medical staff to be regularly present. However, none of these studies have examined combat sports, where there is the additional issue of risk of serious head injuries, including concussion and death (albeit a rare, but real risk), where the 'culture of risk' may be highly influenced by coaches and other insiders who may not be as constrained by governing bodies as much as they are in other contact sports – this point is picked up towards the end of this chapter. Thus, this thesis will focus on the medical support that takes place in combat sports and in particular on combative martial arts which appear to be less regulated (Channon, Matthews and Hillier, 2020a; 2020b; 2021) in comparison to more popular performance sports such as rugby, National Football League (NFL) and the like. As a way to further understand medical support within sporting spaces, I will briefly review some key literature which I have organised in the form of a theoretically informed, rather than systematically developed, typology of medical support.

2.3 Typology of Medical Support

Max Weber (1949) introduced the concept of an 'ideal-type' as a heuristic device for categorising certain elements of reality into logically precise constructs. According to Weber (1949) an ideal-type "is formed by the one-side *accentuation* of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally

absent, concrete *individual* phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified *analytical construct*" (p.90, emphasis in original). In other words, ideal-types are based on abstract constructs that can help understand certain phenomena in a more systematic way. As such, it is a constructed ideal that approximates reality by identifying and 'accentuating' particular features of a social phenomenon.

Weber (1949) noted that the term 'ideal' is there for analytical purposes and therefore should not be taken as a real representation of society. He further described it as a "utopia" that "cannot be found anywhere in reality" (Weber, 1949, p. 90). Instead, it exists as an "idea" that is transformed (in terms of its characterisation) "into a consistent ideal-construct by an accentuation of [its] essential tendencies" (Weber, 1949, p. 91). This shows how an ideal-type can serve as a conceptual tool that can help typify certain elements of reality through logical abstractions that emphasise central elements of a given phenomenon.

Kotarba (2001) proposes that sports medicine, as an occupational healthcare system, can be organised into to three types: elite, managed and primitive. The "style, tone and meaning of occupational health care delivery" in these systems is largely dictated by the norms of the work culture (Kotarba, 2001, p.767). This means that the quality and complexity of the health care provided in each type reflects the value of the worker (in this case, athlete-patients) to the employer (e.g. sports clubs, organisations and promotions).

Elite occupational healthcare is provided to the most valuable and not easily replaceable workers in an organisation. The type of medical care they receive is the most expensive and is typically delivered by highly specialised medical personnel. Managed occupational healthcare is available to workers who are deemed 'typical' and are not of particular importance. This type is predominantly framed in the value of rationality, in that the quality of medical care provided must be adaptable to the organisation's economic contingencies. Health care in this setting is delivered and managed by a general practitioner who works for and reports to the organisation. Primitive occupational healthcare is offered to the least valuable and easily replaceable workers. There is no real effort to provide any type of optimised healthcare, as the goal here is "to patch up the worker in an incidental manner – when care is available and when there is an immediate need for care" (Kotarba, 2001,

p.768). Healthcare is delivered by 'auxiliary' medical personnel (e.g. nurses and complementary and alternative medicine specialists, CAMs) who typically provide their services on a voluntary basis. Because of that, primitive healthcare is often seen as benevolence or charity.

However, three key issues arise from Kotarba's (2001) typology. First, it suggests traditional and hierarchical notions of medical control and power, which does not take into account the medicalisation thesis described earlier (that medicine is centrally placed in the resolution of perceived social problems). As such, it is quite dated and does not offer an accurate representation of the organisational structure of contemporary sports medicine. Second, irrespective of the quality of the healthcare available, it is based on the assumption that 'medical' care in sport is always provided by medical personnel. Lastly, while Kotarba (2001) further examines the specific social dynamics of primitive occupational health care through his ethnographic work in rodeo and wrestling, no similar empirical evidence was provided for the elite and managed models of healthcare. Indeed, Malcolm (2017, p.103) argues that "Kotarba's belief in the existence of elite and/or managed occupational healthcare in professional sport is largely a matter of conjecture". He then extends his critique of Kotarba's (2001) assessment of the variations in occupational healthcare by evaluating studies of medical provision in sport. In this he specifically details how healthcare provision in English professional football and rugby union (both of which are arguably the wealthiest sports in the UK), which under Kotarba's depiction would hypothetically fall under the 'elite' type, show significant elements of managed and/or primitive occupational healthcare. These examples illustrate that even in the most competitively elite sports settings, wealth has a limited impact on the resources and quality of medical care delivered to athletes. Malcolm (2017) also argues that despite the increased medicalisation and the ever growing presence of sports medicine specialists in those spaces, elite occupational healthcare still remains as something that is beyond the norm in sport.

Considering the preceding discussions, I utilise Weber's concept of ideal-types to propose an improved typology of medical support in sport to help frame this literature review. The purpose of this is to provide a true representation of the different types of medical support evidenced in academic literature. This process included surveying a wide range of academic

literature (not only limited to sociological studies) that mention or examine any type of medical support and/or the relationships athletes possess with medical care personnel and medical provision more broadly. Unlike Kotarba's (2001) hierarchy of medical care, this typology is not concerned with the athletes' level (elite, pro, amateur), instead it is focused on athletes as patients, irrespective of their level of competition. In other words, it is categorised on the basis of the level of medical support that is available to athletes and the people that provide it. Within this is also a broad discussion of the medical personnels' methods of employment as this (more often than not) reflects the type of medical care they are able to offer and provide. Considering these interlinked points can help logically extrapolate the types of medical support that are absent or yet to be explored within the literature. This typology consists of four interrelated but distinct ideal-types: affiliated; transient; independent; and pseudo medical support. Each of which describes, in an abstract sense, the degree of closeness to the athletes and the team.

It is important to note that the first type contains more academic evidence compared to the other categories. This is because the majority of empirical research on medical relationships in sport contexts has been focused on this area. As such, the subsequent types are largely based on logical inferences and predictions, as the body of research available to inform these categories is limited. So while certain elements of these categories, in Weber's language, do not necessarily exist in reality (in terms of lack of empirical evidence from the literature), they still provide useful constructions for framing further analysis.

2.3.1 Affiliated Medical Support

This category includes any health care personnel that are involved in providing, managing and/or coordinating medical services for athletes that are affiliated to a sports team or institution. They are either part of an established onsite medical team or work in dedicated medical centres. This type of medical support is typically provided to athletes involved in high performance (Boyd, 2007; Malcolm, 2006; Mountjoy, 2019; Waddington, 2002; Theberge, 2006; 2008a; 2008b) and collegiate sports (in American and North American settings) (Safai, 2003; 2004; Stockyard, 1997; Walk, 1997; 2004). For example, many tennis nations have

established both centralised and regional medical centres that provide medical care to elite and junior players (Pluim et al., 2007; Wood, 2006) (Pluim et al., 2007; Wood, 2006). Similarly, most high-performance athletes in Canada have access to sport medicine services in specialised training facilities located across the country (Theberge, 2008a; 2008b).

Affiliated medical personnel are often physician(s) and/or physiotherapist(s) but some sports provide multi-disciplinary teams that can include chiropractors, osteopaths, massage therapists, nutritionists, psychologists and even dermatologists (Hanson, 2018; Pluim et al., 2007; Theberge, 2008b; Wood, 2006). The relationship of medical personnel to these institutions (most of which are evidenced in English rugby unions and English football) range from very loose arrangements to full-time employment (Malcolm, 2006; Stockyard, 1997; Waddington Roderick and Naik, 2001; Waddington,2002).

Team physicians come from a variety of subspecialties such as orthopaedics, cardiology, dermatology and sports medicine (Mitten, 2001; Stockyard, 1997; Waddington, Roderick and Naik, 2001; Waddington, 2002). However, many hold a primary employment in general practice and are often hired by sport teams on part-time basis (Carter, 2009; Hanson, 2018; Malcolm, 2006; Malcolm and Sheard, 2002; Pluim et al., 2007). Their job typically includes running injury clinics for athletes during the week (but are often called to the club when needed). Some national organisations employ team doctors to act as chief medical advisors (CMAs). CMAs are often responsible for coordinating the medical care and treatment plan of each player with close communication between the coaching staff and medical team. In some cases, they are also responsible for the appointment of other medical staff members (Theberge, 2008b; Wood, 2006). However, in English professional football, team doctors tend to be appointed by committee members or club managers based on personal relations and sporting interest (Waddington, Roderick and Naik, 2001; Waddington, 2002). In these settings, relatively few doctors are compensated for their services and some voluntarily provide their services as a 'favour' for the club. This research is now twenty or so years old, so it is unclear if such appointment methods are still as commonplace today.

Furthermore, the majority of the medical care is provided by physiotherapists, who in most cases, tend to work independently from the club doctor. They are typically employed on a

full-time basis and are present during training sessions and competitions (Malcolm, 2006; Malcolm and Scott, 2011; Malcolm and Sheard, 2002; Safai, 2003; 2004; Waddington and Roderick, 2002). As such, Malcolm (2006) argues that physiotherapists in rugby, and English sports more broadly, tend to have an impact over the diagnosis of injuries, thereby further challenging the traditional authority of doctors. Similarly, McEwen and Taylor's (2010) investigation on the role of physiotherapists in sports medicine revealed that they are often viewed as the 'dominant clinicians' in their teams. This is largely due to physiotherapists being the players' primary source for injury management (Liston et al., 2016; Stockyard, 1997; Theberge, 2009; Waddington Roderick and Naik, 2001). Waddington (2002) argues that athletes are more likely to seek medical care when they have access to it. However, some athletes tended to hide their experiences with pain and injury from their club's medical staff due to their lack of medical autonomy (Waddington and Roderick, 2002).

Collectively, and as detailed in section 2.1, much of this work tends to focus on the ethical issues and tensions that sport medicine personnel face when practicing in 'nonorthodox' settings (Hanson, 2018; Liston et al., 2016; Malcolm 2006; 2009; Waddington, 2002; Waddington and Roderick, 2002). In turn, this focus draws attention to the paucity of literature relating to athletes' perspectives and lived experiences of trying to navigate their way through accessing and seeking 'medical' support for their sport related injuries and conditions.

2.3.2   Transient Medical Support

This category includes medical personnel that are not affiliated to a sports club, organisation or promotion. They are usually only present during sporting events for pre and/or post medical evaluations and/or to provide treatment during a game or competition. This includes paramedical teams, medical stations or temporary clinics in marathons or tournaments or even unaffiliated medics that detect concussion (Hanson, 2018; Kotarba, 2001; Mountjoy, 2019). Such personnel are typically hired by the organisation or the promotor and can even be working within charitable programmes that offer their services for free. For example, Kotarba's (2001) ethnographic work with professional rodeo cowboys revealed that

healthcare in rodeo events is provided by the 'Justin Heelers' (sponsored by the Justin Boot company, as part of a public relations exercise) which is a charitable organisation that mainly consists of athletic trainers that work on voluntary basis. Kotarba (2001) also evidenced that in wrestling, where emergency medical care is typically provided by current and former wrestlers that happen to have medical occupational backgrounds. Such voluntary and charitable teams tend to operate with a strong spirit of community healthcare.

Interactions with these medics are often transient and short-lived and do not extend beyond the context of the sporting event or competition. Athletes tend to seek this type of medical care when needed, such as when marathon runners utilise the different types of medical care provided in 'medical tents' during and after the race (Breslow et al., 2001; Tso and Kim, 2021). However, some athletes tend to have an antagonistic and somewhat untrusting relationship with these medics, especially in premedical evaluations (most of which are not voluntarily sought out by athletes) as they are often seen as a potential threat that might stop them from participating. This is particularly evident in combat sport settings, where fighters tend hide or downplay any potential medical problems from ringside medical personnel because their interactions are often shaped by the need to be passed as 'fit to fight' (Channon, Matthews and Hillier, 2020a; 2020b; 2021).

Thus, a further gap in the literature that this thesis will address is how health care is accessed in MACS settings where medical staff, although transiently present during competitions, remain largely unknown to the athletes. This means that the athletes are less likely to form interpersonal relationships with these transient medical personnel compared to athletes that have access to affiliated medical support.

2.3.3 Independent Medical Support

This category is associated with athletes in some amateur and high-performance sports that do not have access to club or sport-affiliated medical support and where medical staff are not present even transiently at sporting events. Athletes in these situations tend to resort to their general practitioners (GPs) for their sport specific medical needs. This is often the case in

countries that offer free public healthcare such as the United Kingdom, Ireland and Denmark (Charlesworth and Young, 2004; Liston et al., 2016; Pike, 2005; Thing, 2004). For example, Thing (2004) revealed that non-elite athletes and top players from individual professional sports clubs in Denmark turn to the public health system for medical assistance. In other words, they tend to navigate their own way through the healthcare system in order to receive the sport specific medical care they need. However, athletes seldom sought this type of medical care and often spoke about the incompetence of GPs in diagnosing and managing their sport injuries (Allen-Collinson, 2005; Charlesworth and Young, 2004; Liston et al. 2006; Malcolm and Pullen, 2020; Pike, 2005). Doctors in such settings are often classed as outsiders due to their lack of apparent knowledge and embodied experience in sport (Matthews, 2020). I infer that this might also be the case in sports more broadly.

This category also includes medical personnel that are recommended by fellow athletes, coaches, family members and even club-affiliated medical staff. These recommendations are usually made towards physiotherapist, osteopaths and chiropractors that are independent from the club. Athletes are more likely to seek help from these medical personnel compared to GPs because of 1) the trusting relationships they have with the person recommending these services 2) they often provide sport specific medical care that will help them work around their injuries (especially if they know that they helped other athletes with similar problems) (Kotarba, 1983; Liston et al., 2006; Malcolm, 2009; Pike, 2005).

Furthermore, it is quite common for rugby players to receive treatment from non-affiliated physiotherapists either recommended by medical staff or located by the players themselves (Malcolm and Sheard, 2002). While recommended medical personnel are independent from the club, some tend to have loose financial relationships with club-affiliated medical staff based on repeat referrals. In such cases, they can be described as having a pseudo affiliation to the club, especially in situations where the club covers the cost of their treatment. However, in most cases (especially in sports that lack access to dedicated medical support) athletes tend to meet these costs themselves.

There have been no published studies examining the seeking of independent medical support by MACS athletes. Channon, Matthews and Hillier's work (2020a; 2020b; 2021), although

closely related and certainly of importance contextually, focuses specifically on the role, interactions and behaviours of ringside medical staff (who are typically either self-employed medical personnel (e.g. GP, emergency medical technician) or paramedical teams that offer a variety of emergency services at different sporting events) that are paid by promotors to work at their events – i.e. not independent. There could be particular problems for fighters in seeking such support, as these medical staff are likely to have a very limited knowledge of the MACS 'fighting' subculture, the repetitive nature of contact experienced during training, the severity of the injuries that can occur in training and fights including concussion, and the seriousness with which fighters approach their training 'camps' and their determination to train and compete through very serious injuries.

2.3.4 Pseudo medical support

This category includes seeking and exchanging medical advice and sport related topics from internet sources such as search engines, social media accounts (e.g. popular/celebrity athletes) and online forums (Corcoran et al., 2010; de Boer et al., 2007; Diaz et al., 2002; Leonhard, 2009; Miah and Rich, 2008; Schmidt and Ernst, 2004; Wilson and Hayhurst, 2009). This is largely based on convenience, as athletes are more likely to use the internet prior to contacting a healthcare provider or consulting with their coaches, other athletes and/or family members (Gerbing and Theil, 2016). Some studies show that athletes tend to prioritise advice and information that is experience-based; The scientific and medical basis of this knowledge was largely insignificant (Bundon, 2008; Gerbing and Theil, 2016; Kimmerle et al. 2011). In other words, it seems that athletes prefer lay information that offers some sort of practical value that can be applied in the context of sport (Hardey, 1999; Kimmerle et al., 2012). This appears, based on recent work by Matthews (2020), to be the situation in boxing – which is explored in more detail below.

Pseudo medical support also includes medical advice obtained from lay people (i.e. non-medically trained persons). Safai (2003) argues that in the absence of club-affiliated medical support, athletes are more likely to engage in 'team-doctoring' – a term she used to describe athletes seeking medical advice from teammates and coaches. Such interactions might lead

to usually well-intentioned 'medical' advice being either wrong, misinformed or lacking in important ways. These lay people do not typically have formal medical expertise but are largely trusted over medical personnel due to their experiential knowledge in the sport. As such, the advice they provide is performance specific. This is similar to Freidson's (1960, p.377) "lay referral system" which describes an informal network of lay people that may influence an individual's attitude towards illness and formal healthcare. However, Freidson's (1960;1970) work is focused on the challenges they present to medical personnel in relation to patient non-compliance and issues regarding power relations between doctors and patients, not necessarily the circulation and transfer of (medical) lay knowledge.

While 'team-doctoring' was initially introduced by Safai (2003), it is yet to be thoroughly theorised or empirically described. This was not explored in detail in Safai's (2003) work as it was not the main subject of her argument and was acknowledged as an area that needed further investigation. Considering this, and the apparent transient nature of medical relationships in combat sports, it seems fitting to study this form of lay sports medicine within such settings. The specifics of how this related to MACS will be discussed below. Before that, and to develop some useful ideas to frame this work, in the next section, I discuss the construction of medical knowledge and its possible sociocultural implications within sporting contexts.

2.4 Medical Lay knowledge and Thought Collectives

In his pioneering work *Genesis and Development of a Scientific Fact*, Ludwick Fleck ([1935] 1979, p.38) argued that medical knowledge is the outcome of a collective process and communication amongst members within a "thought collective", defined as "a community of persons mutually exchanging ideas or maintaining intellectual interaction". A thought collective consists of two concentric circles: a small esoteric core of "special experts", surrounded by a larger exoteric circumference of "laymen", "educated amateurs" and/or "general experts" (Fleck [1935] 1979). According to Löwy (1988), in a medical context this knowledge is constructed through the exchange and circulation of ideas and practical experience amongst specialists, general practitioners and patients. To Fleck ([1935] 1979),

these circles have a "relation of the elite to the masses", where the "creation of thought" can only be initiated from members within the esoteric circle. This suggests that circulation of ideas is unidirectional and that the exoteric circle, as the receiving end, plays more of a passive confirmatory role.

Members within a collective are connected together via a shared "thought style" which serves as a "special carrier for the historical development of any field of thought, as well as for the given stock of knowledge and level of culture" (Fleck [1935] 1979, p.38). That is to say that within a collective, individuals become accustomed to a certain thought style that plays an active role in shaping their perceptions and ways of thinking. However, Fleck ([1935] 1979) stated that thoughts exchanged between members within any given collective are only stable if they exist long enough. This means that social characteristics shared amongst members in stable or comparatively stable collectives cultivate a larger sense of conformity where a certain thought style is mediated, circulated and preserved. This implies that thought styles are less likely to arise within collectives that are transient, less structured and short-lived. In such collectives there is no 'relation of the elite to the masses', but rather a "special mood" that produces:

> A thought structure [*Denkgebilde*] that belongs to neither of them [people in that collective] alone but nevertheless is not at all without meaning. Who is its carrier and who its originator? It is neither more nor less than the small collective of two persons. If a third person joins in, a new collective arises. (Fleck [1935] 1979, p.43, emphasis added).

Fleck ([1935] 1979, p.92, my addition in brackets) also argued that "the adoption of one thought style (likely) excludes the simultaneous take up of a different one", suggesting that no communication or exchange of ideas can arise between different collectives. Yet, he noted that individuals can be members of several exoteric circles, thus belonging to several thought collectives. His work also structures the passing of knowledge as flowing from the top down – that is, from experts to the public. These ideas have been explicitly and implicitly reconsidered in more recent developments of this work (Cobley and Sanders, 2007; Freidson, 1960; Löwy,1988; Mößner, 2011; Peine, 2011).

In this light, Arksey's (1994) work on the role of 'lay experts' in the social construction of Repetitive Strain Injury (RSI) offered a valuable assessment of Fleck's ([1935] 1979) conceptual analysis. She argued that "lay persons introduced doctors to a different way of thinking", which was evident in the different ways in which RSI suffers had an influence in shaping their physicians medical "fact building" knowledge (Arksey, 1994, p.454). Given the controversial and ambiguous aetiology of RSI, some physicians acknowledged their patients subjective experience with the illness and integrated this 'lay expertise' to further their own understanding of the condition. This intercollective communication between RSI patients and their physicians demonstrates that 'non-experts' within exoteric circle can have a participatory role in the construction of medical knowledge. Which suggests that the exchange of knowledge, in some cases, can be less hierarchical than what Fleck ([1935] 1979) originally suggested.

Other studies of medical lay knowledge indicated similar findings (Busby, Williams and Rogers, 1997; Elwyn et al., 2000; Epstein, 1995; Pols, 2014; Prior, 2003; Wilcox, 2010; Sarangi, 2001; Storni, 2015). Notably, Prior (2003) examined the concept of 'lay experts' in three different case studies by exploring the limits of their expertise. His work showed that lay persons could effectively identify aspects of change in existing symptoms, but had almost no knowledge of disease processes that lie behind them. As such, their experiential knowledge was partial and restricted to symptomatic features relevant to their lives. While considerably useful, that does not put them on the same level of qualified medical professionals. Pols (2014, p.75) argues that such knowledge should be understood as "practices of knowing in action rather than as a body of knowledge". And that it is through these practices that "different techniques for living with disease may be derived". So while "lay medical culture seems unlikely ever to become identical with professional medical culture" (Freidson, 1960, p.376), patients' lay expertise about their conditions can help provide complementary forms of knowledge. In line with this, Prior (2003) concluded his work by stating that lay knowledge, in some cases, can be in error:

Experience on its own is rarely sufficient to understand the technical complexities of disease causation, its consequences or its management. This is partly because

experiential knowledge is invariably limited, and idiosyncratic. It generates knowledge about the one instance, the one case, the single 'candidate' (p.53).

Collectively, these studies highlight some issues associated with the medical 'expertise' of lay people in several social settings. Arksey's adoption of Fleck's conceptualisation of "thought collectives" provided a useful theoretical analysis for understanding and assessing the social and cultural influence of lay people in knowledge construction. As explained earlier, Fleck's ([1935] 1979) model is not free from empirical problems, but his general concepts still open up helpful avenues for framing and interpreting empirical research.

Taken together, and having laid out key literature and introduced some theoretical tools, the preceding sections have helped demonstrate the importance of the as yet under-theorised and under-reported notion of team-doctoring for further understanding athletes' health and risk related practices, especially in sport contexts that lack access to medical support. As such, exploring this in combat sport spaces offers an interesting organisational distinctiveness which can help provide opportunities to empirically detail team-doctoring. To help provide further clarity of what is being argued here, the following section will provide a discussion around these connected issues and how they specifically relate to MACS .

2. 5 Martial Arts and Combat Sports' Organisational Distinctiveness

While MACS exist within the same social processes that shape and frame all sports, including various phases of globalisation, economic and political pressures, and shifts in the codification, professionalisation and commodification, to name but a few, they can also be understood as distinctive in various ways. It is this distinctiveness that marks them out as interesting cultural phenomena to further consider the issues around medicalisation, performance ideologies and medical care that have been discussed above.

So-called 'Eastern' or 'traditional' martial arts, which include those activities that can trace important moments of their (fictional, real, or mythologised) historical development to countries such as Japan, China, Thailand and Korea, still bear the legacy of their various

historic, sociocultural origins in their contemporary forms, when practiced in other (i.e., modern Western) social contexts. This includes, for instance, training with archaic battlefield weapons, or incorporating meditative practices alongside fighting techniques. These martial arts, which regularly place emphasis on enhancing various elements of wellbeing as well as enhancing a person's capacity for self-defence, continue to be popular in many settings. Practitioners of such martial arts may conceptualise them as technically, philosophically and culturally distinct from 'sports', as such (Channon, 2012). Yet alongside this, there are also 'sporting' versions of such martial arts whereby the central tenets of Westernised performance sport have been adopted, resulting in some changes to the philosophical as well as the technical content of these arts' practices (Channon and Jennings, 2014; Van Gestel, 2019). In this regard, sport karate, taekwondo, Muay Thai, judo, and other performance forms of martial arts can all be understood as drawing on the organising principles, objectives and governance structures of sports that were codified and professionalised in the 'West' – Britain and the United States were of particular importance in framing this process. In Britain the sporting version of popular martial arts, while maintaining important symbolic connections to their Eastern roots, tend to be organised along similar lines to the model set by boxing.

The sport of boxing has its own distinctive historical development. Of course, it is possible to trace early versions of these sports to preparation for battle or hand to hand combat of sport forms. But is it more useful for the means of this discussion to consider prize fighting as the functional start point. In this regard, boxing or pugilism, was tied to spectator entertainment, gambling, and has a clear carnivalesque dimension to its origins (Boddy, 2019; Sheard, 1997). There is a separate 'non-professional' thread to boxing's development, which while present in other sports, has remained more formally encoded in amateur boxing. This sport, which is still tied in important ways to professional boxing, is distinctive in that the 'ethos of amateurism' is codified in the sports rules and governance. And there is some evidence to suggest that this amateurism is not simply a symbolic or institutional 'platitude' and that it still frames the way the sport is taught and understood by boxing insiders (Matthews and Jordan, 2019). With that said, it is the professional version of the sport that usually gets the most attention in terms of column inches and time on new and traditional media. And professional boxing has, until the recent rise of mixed martial arts (MMA) and the Ultimate Fighting Championships (UFC) in particular, been the most commodified, globalised and

widely recognised of the MACS. This means that many of the ways that other MACS have been organised, governed and promoted, including the UFC, have followed important parts of the 'boxing model'. This often includes the length of rounds, scoring, fighter pay, and 'sanctioning' of title fights.

What is of particular importance for the analysis presented in this thesis is how this organisational distinctiveness structures the medical care that fighters in various combat sports receive. In particular, except for at competitive events (Channon, Matthews and Hillier, 2020a; 2020b; 2021), there appears to be very little presence of medical professionals in and around combat sports. Combat sport athletes and their coaches tend to see such professionals as 'outsiders' (Matthews, 2020) whose medical advice often does not align with the fighters' motivation to compete even with various injuries (Channon, Matthews and Hillier, 2020a). In this regard, at least within Matthews' work on boxing, it appears that MACS are spaces where experiential 'medical' knowledge is often preferred to that of medically trained 'outsiders'. And this means that,

> ...while boxers can draw on experiential engagement to develop their understandings and bodily competencies, this process is shaped by risky body cultures which dominate the sport. Such social framing adds layers of meaning to these experiences and acts to largely recreate the traditional patterns of physical risk that are often engrained within boxing and performance sport more broadly (Matthews, 2020, p.15).

While experiential medical knowledge is not in and of itself necessarily 'wrong' or inappropriate, it can contribute to and maintain the risky attitudes to the body that athletes broadly, and fighters in particular, face in their sports. And as Matthews (2020) shows, this process is directly tied to the knowledge that is passed from coaches to athletes and from athletes to athletes – a neat case study, then, for exploring the process of team-doctoring.

It appears that martial arts subculture, and gyms in particular, are interesting spaces within which to consider some of the issues around lay medical expertise, the medicalisation of sport and how medical care is delivered in the absence of formal medical relationships which are

highlighted in the sections above. This is particularly apparent when topical issues around concussion and brain injuries are considered.

2.6 Concussion, Brain Injuries and Medical Care

Due to the extant nature of many sporting versions of MACS, to hit and/or cause damage to one's opponent, often focusing on the head, there is a logical connection to various forms of brain injury. Matthews (2020) highlights this within his research, which draws heavily on Woodward's work where she argues that:

> Boxing, even more than other sports presents an activity in which the body is central … the whole schema of boxing is achieved, experienced and inscribed on [and in] the boxer's body … it also manifests some of the most extreme versions of embodiment through the beautiful body and the broken, damaged body. (Woodward, 2007: 63–64, cited in Matthews, 2020)

While Matthews and Woodward's focus is on the particular sport of boxing, it seems from other similar work that this focus on the damage which is done to bodies and brains is a common feature of other combat sports (Burke, 2022; Channon, 2020; Green, 2011; Lenartowicz, Dobrzycki, and Jasny, 2023). Such spaces seem, then, to represent a particular manifestation of the previously discussed 'cultures of risk' that dominate various performance sports. A recent outcome of such normative bodily action has been the attention that has focused upon concussion and brain injuries in sport. Considering this helps highlight a particularly prominent issue in terms of the ways that concussions and brain injuries are understood, assessed, managed and treated in MACS spaces.

Hobson (2020) describes the 'concussion crisis' as "the most important sports story of the 21st century". And while it is clear from an ever-increasing body of evidence that this crisis is a biomedical issue, it is also clear that the 'crisis' is social, being marked by government inquiries, attempts at litigation, rules changes, various 'return to play protocols', media coverage and campaigning (Malcolm, 2017). Despite having an increase in research dedicated

to identifying and managing concussions, they remain one of the most clinically (Putukian et al., 2015), symptomologically (Gaetz, 2017), biomechanically (Rowson et al., 2016), neurologically (Sharp and Jenkins, 2015) and socio-culturally (Liston et al., 2016; Malcolm, 2009) complex injuries that athlete support staff, medical professionals and governing bodies face. Complexity aside, increasing research suggests a link between repeated sport induced brain trauma and a range of acute, subacute and chronic health consequences. The potential consequence with perhaps the biggest cultural impact is the increased awareness and media coverage around associations of repeated head trauma and neurodegenerative diseases (Nowinski et al., 2022), which are particularly distinct due to the threat to the sport participants brain health and conscious 'self' (which memory, behaviour and personality changes can threaten, and all are associated with concussive injuries). Malcolm (2020) indicates this distinction of the injury, whereby it reaches beyond just the 'physical' and has gained global attention across the 'West' due to the increasing cultural trends placed on mental wellbeing. This cultural context and increasing public awareness are important to acknowledge when considering medical practitioners 'on the ground' experiences with managing the injury.

Given the complexity within medical domains, it is possible to understand why many sport medicine professionals favour subculturally normative understandings over current medical definitions and guidelines for concussion assessment and management (Covassin and Stiller-Ostrowski, 2009; Liston et al., 2016; Malcolm, 2009; McCrory et al., 2009; Notebaert and Guskiewicz, 2005). Important to note here, is that the 'definition' of concussion is contested and not uniform. The term broadly denotes the signs and symptoms of a traumatic brain injury, which is the primary event in the mechanism of the injury. Throughout this thesis, the term concussion is used to broadly describe the spectrum of brain injuries that can occur in sport and no attempt is made to medically define the condition as this remains contested across medical domains. Rather, this thesis is interested in exploring the subjective understandings and experiences with head injuries amongst combat sport athletes. Also, the distinct nature of concussive symptoms mean that they tend to not be deemed as 'physical injuries'. This often leads to athletes' understanding of their experiences as being ones that they can, seemingly, 'play through' (Hardwicke, 2022), which further complicates the medical management of concussion.

Resonating with this ongoing uncertainty and complexity around the injury, Malcolm's (2009) work on the role of medical uncertainty in the management of concussion in rugby captures this idea effectively. In this work he demonstrates how rugby union club doctors recognised that their diagnosis of concussion was at times influenced by their experiential knowledge and their place embedded within the subcultural networks of sport. Consequently, they came to adopt a definition for diagnosing concussion that was accepted by players and coaches because it not only enabled their medical consultations to continue but also maintained their position within the club. Similarly, Liston et al. (2016, p.4) argue that "club doctors replaced medical/clinical definitions of concussion with a lay understanding and definition of it dominant in the sport subculture". Considering this, sport medicine professionals' diagnosis and understanding of concussion are in part shaped by the social norms that dominate performance orientated sporting spaces, rather than solely being a product of clinical/medical knowledge of the condition (Kotarba, 1983; Liston et al., 2016; Malcolm, 2009; Safai, 2003; Walk, 1997; 2004).

Furthermore, if it is accepted that many athletes exist within subcultural spaces in which pain, injury and risk is both normalised and valorised then the medical management of concussion is further complicated. With the interplay of the concepts of cultures of risk (Nixon, 1992), sportsnets (Nixon, 1992) and adherence to the 'sports ethic' (Hughes and Coakley, 1991) often encouraging health-compromising behaviours, medical personnel must also compete with powerful social norms within sporting subcultural spaces when managing concussive injuries. Malcolm, Papathomas and Warden (2023) recently highlighted this in their study of professional wrestling. Here, they provide a critique of the increasing calls for 'cultural change' to address sport-related concussion which do not offer a sufficient theorising of what 'culture' is in sport, and how it interacts to shape athletes' behaviours. The research suggested wrestlers existed within a space whereby pain was ignored and competing through a suspected concussion was linked to the 'wrestling identity'. In short, the paper suggests that there exists a number of structural-cultural causes of concussion in the sport, as well as a lack of continuity in the provision of health care which left the wrestlers to largely self-manage concussive injuries or ignore them by aligning with the normative behaviours of the wrestling subculture.

Athletes continue to engage in health-compromising behaviours and sporting subcultures are powerful sites in which they are socialised into these behaviours becoming normative. This leads to the need to understand these spaces and athletes' subjective negotiations of them to gain as much insight on how injuries, and specifically concussions, are medically managed. This is coupled with the medical community reaching out for lay understandings to gain 'medical certainty' (Malcolm, 2019) about concussion, leaving the question: what does the construction of lay knowledge about concussion look like in sporting spaces, like MACS, where team-doctoring is likely? After a discussion of methodological issues, the remainder of this thesis will explore data that empirically and theoretically discuss and advance these interlinked points.

Chapter Three – **Methodology and Methods**

3.0 Introduction

The methodological debates and strategies that underpin this study are presented within this chapter. Initially, to place this work within the context of qualitative research, broad descriptions of the ontological, epistemological and methodological positions within philosophical paradigms were discussed. This is followed by a short examination of the contemporary treatment of reflexivity within social research. In particular, this provided an epistemological basis from which the practicalities of conducting qualitative research in combat sports were considered. Building on this, detailed discussions of the research process were outlined. This serves as a justification for the style of research that was undertaken in this study. Here, my position as a researcher and the practicalities of gaining access, and insider/outsider relations were considered. Throughout this, the data collection methods – field observations and semi-structured interviews – are explained. After that, the process of data analysis, and how it shifted and emerged throughout the course of this project, is described. Following this, issues concerning insider familiarity were discussed. Accordingly, drawing on Way, Zweir and Tracey's (2015) work on interactional practices that lead to participant self-interrogation, critical incidents of the participants' own process of self-reflexivity are explored. To conclude this chapter, some ethical issues are considered before describing the practical means by which observations and interviews were obtained, recorded and transcribed.

3.1 Philosophical Paradigms

According to Willis (2007, p.16) "at the basic or fundamental level there is a philosophy of science that makes a number of assumptions about fundamental issues such as the nature of truth (ontology) and what it means to know (epistemology)". Creswell and Creswell (2018, p. 4) advocate a 'holistic' approach to qualitative research where "ontological and epistemological positions invariably inform methodological and methods choices". These positions combine beliefs about ontology (the nature of being or reality) epistemology (how

knowledge is obtained and what counts as knowledge) and methodology (the strategy that lies behind the choice of method(s) used to acquire knowledge) (Denzin and Lincoln, 2011). Guba and Lincoln (1994, p.107, emphasis in original) viewed these principles as paradigms which are:

> A set of *basic beliefs* (or metaphysics) that deals with ultimate of first principles. It represents a *worldview* that defines, for its holder, the nature of the world, the individual's place in it and the range of possible relationships to that world and its parts.

The idea of paradigms was refined and detailed by Thomas Kuhn (1962), in his book *The structure of Scientific Revolutions*. Kuhn (1970, p.175) later defines research paradigms as "the entire constellation of beliefs, values and techniques shared by members of a given scientific community". According to Kuhn (1970), this means that scientific development is only possible if scholars who work within a certain discipline adhere to similar rules, principles, and methodologies for scientific practice. This particular way of understanding the world influences how academics go about seeking answers to their research questions (Creswell and Creswell, 2018). Therefore, Benton and Craib (2011) argue that paradigms, in Kuhn's view, are necessary for scientists to define problems and select methods in their research. As such, a research paradigm is structured around its ontological, epistemological and methodological assumptions. In other words, an individual's understanding of ontology and epistemology reflects the philosophical paradigm or approach within which they operate. Subsequently, these philosophical parameters inform the choice of methodological processes and procedures.

The terms quantitative and qualitative are often used to describe the two methodological approaches for research (Creswell and Creswell, 2018; Denzin and Lincoln, 2011; Barron, 2006). These two terminologies suggest that the main difference between them is the type of data collected. This is often characterised by an oversimplification that assumes that quantitative researchers collect data in the form of numbers or statistics whereas qualitative researchers do not. However, as Willis (2007, p.15) explains, "any exploration of qualitative research methods cannot be meaningfully accomplished without attention to the underlying

assumptions, or "givens," that guide the use of a particular research method". This means that the difference between these methodological approaches is not simply the type of data collected, but rather, it is within the 'underlying assumptions' or paradigms that inform these methods.

The broad paradigms of knowledge are positivism, post-positivism and interpretivism (Denzin and Lincoln, 2011). Each has distinct epistemological and ontological positions, varying implications for the types of research questions proposed, the choice of methodology employed, the type of data collected and the subsequence analysis of such data (Jones, 2015).

According to Hesse-Biber (2017, p.8), positivism is "the cornerstone of the quantitative paradigm". Ontologically, positivism presumes a reality that is independent from human actions, behaviours and experiences (Willis, 2008). This approach to social science recognises similar patterns within a phenomenon that is then interpreted within a generalised context (Johannesson and Perjons, 2014). This means that a positivistic analysis should not be influenced by time, place, or people.

Epistemologically, positivism implies that obtaining knowledge about the social world is only possible through observation and experimentation. This means that positivist researchers should take the role of an observer who is detached from the subjects being studied. Within this, participants' feelings, emotions, opinions and/or beliefs are largely overlooked (and usually unaccounted for) since they are viewed as unreliable parameters that cannot be directly observed or measured (Jones, 2015).

Methodologically, researchers working within a positivist paradigm aim for a quantitative investigation. Here, experimental methods are favored because they provide objective data and knowledge. In other words, according to positivists, reality is something that is more or less quantifiable (Creswell and Poth, 2018). As such, they see the 'social' as an object that can be studied 'scientifically'.

Challenging the traditional notion of the "absolute truth of knowledge", post-positivism is often described as the way of thinking that followed positivism (Phillips and Burbules, 2002,

p.3). According to Creswell and Poth (2018), post-positivist researchers assert that it is not possible to obtain a true objective understanding of the social world through measurement and observation. In this regard, and in an attempt to account for as much of reality, post-positivist approaches tend to be marked by an openness to different methodological procedures (Denzin and Lincoln, 2011).

Interpretivism (also referred to as constructivism) emerged as a reaction to positivism and is commonly regarded as the approach for conducting qualitative research (Denzin and Lincoln, 2011). It combats positivistic notions of objectivity by employing procedures that reflect different perspectives of knowledge construction (Hesse-Biber and Leavy, 2006). Ontologically, interpretivism argues that the social world does not exist independently of human actions and behaviour, but rather it is relational, subjective and produced during the research process (Johanssen and Perjons, 2014). This suggests that social reality is constructed by individuals who engage in social interactions and associate meanings to them.

The interpretive approach epistemologically suggests that knowledge is created through social interactions (Hesse-Biber and Leavy, 2006). Johanssen and Perjons (2014, p.169) argue that "as social phenomena are grounded in the actions, experiences, and subjective meanings of people, only superficial knowledge can be obtained by studying people as if they were objects". Considering this, interpretivist researchers consider participants as active collaborators who create social world they seek to examine. Researchers are also not expected to be impartial or "value neutral", but active collaborators (along with their participants), in the production of inquisitive forms of knowledge (Hesse-Biber and Leavy, 2006, p.15).

Likewise, the value of the research is evaluated not on whether it can be replicated, but on how it contributes to the substantive understanding of the phenomenon in question (Jones, 2015). As such, researchers can gain a nuanced and rich understanding of a social phenomenon by taking part in it alongside the individuals who create it (Jones, 2015). This means that interpretive researchers tend to discuss the processes of interaction amongst participants. Furthermore, the main objective of interpretive research is to provide a truthful rendition of the participants' perceptions of the phenomenon under investigation (Hesse-

Biber and Leavy, 2006). Researchers also understand that they bring their own personal, cultural, and historical experiences into their analysis, and they tend to situate themselves within the research to highlight how their interpretations shape their studies accordingly (Creswell and Creswell, 2018).

To conclude, Atkinson and Hammersley (1994, p.251) argue that, in contrast with interpretive qualitative research, a quantitative approach "seeks to reduce meaning to what is 'observable'; that it treats social phenomena as more clearly defined and static than they are and as mechanical products of social and psychological factors". Within this project, the focus on exploring athletes' experiences and understandings of risk, pain and injury, which consists of a wide range of subjective interpretations, does not lend itself to a positivistic approach. This is because, as described earlier, human actions, behaviours and beliefs cannot be reduced to fixed patterns. As such, an interpretive, qualitative mode of enquiry, which attempts to understand the thoughts and understandings of individuals within particular social settings is more appropriate and better suited for this study.

3.2 Qualitative Research

Methodological literature tends to describe quantitative and qualitative research as "mutually antagonistic" approaches (Bryman, 1988, p.93). Instead of that, Creswell and Creswell (2015, p.3) state that qualitative and quantitative approaches "represent different ends of a continuum". Hesse-Biber (2017, p.8) notes that "although we hope the research community is moving past polarizing views of qualitative and quantitative approaches to research, comparisons are frequently drawn". Furthermore, Denzin and Lincoln (2008, p.2) explain that:

> By the 1960s, battle lines were drawn between quantitative and qualitative camps. Quantitative scholars relegated qualitative research to a subordinate status in the scientific arena. In response, qualitative researchers extolled the humanistic virtues of their subjective, interpretive approach to the study of human group life.

The criteria that define qualitative forms of enquiry vary considerably. As scholars tend to have different ideas of what constitutes qualitative research, there is little consensus over a definition that truly captures what it is. As Lyons (2007, p.4) puts it "there is no formulaic way, no blueprint, of how qualitative research ought to be conceptualised and conduced".

Hammersley (2013, p.2) argues that "in trying to understand what qualitative research is we are looking for a set of features that are shared by all examples of it, and that are not found together in other kinds of research". This contrast "reflects the historical development of qualitative inquiry: it emerged as a distinct kind of social science in competition with an already established tradition of quantitative method" (Hammersley, 2013, p.10). This further demonstrates that providing a definition that encompasses all the distinctive characteristics of qualitative research is not as straightforward. Nonetheless, describing them to some degree can still help identify what constitutes qualitative work. In light of this, Denzin and Lincoln (2011, p.3) define qualitative research as a:

> situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them.

In this respect, there are multitudes of paradigms, strategies of enquiry and methods of analysis upon which qualitative social researchers can draw on. This has encouraged most qualitative researchers to develop reflexivity within their research process, as a way to further 'validate' or 'legitimise' their research practices and representations (Lather, 1993). However, the effectiveness of these reflexive strategies has been called into question by several scholars (Lather, 1993; Patai, 2014; Pillow, 2003; Whitaker and Atkinson, 2021). In particular, Patai (2014, p.69) critiques the proliferation of reflexive practices by asking "does all this self-

reflexivity produce better research?". As such, the next section will examine the role of reflexivity as a methodological tool in qualitative research.

3.3 What is Reflexivity?

The question "What is reflexivity?" implies some sort of definition or perhaps an explanation of what the term actually means. There is a significant amount of methodological literature dealing with reflexivity in qualitative research, and many definitions have been offered. Below are some examples:

> Reflexivity, broadly defined, means a turning back on oneself, a process of self reference. In the context of social research, reflexivity at its most immediately obvious level refers to the way in which the products of research are affected by the personnel and process of doing research (Davies, 2008, p. 4).

> In simple terms, reflexivity is an awareness of the researcher's role in the practice of research and the way this is influenced by the object of the research enabling the researcher to acknowledge the way in which he or she affects both the research processes and outcomes. (Symon and Cassell, 2012, p.72)

> Reflexivity is fundamental to an embodied process of discovery. Reflexivity is closely linked to positionality. In order to understand and process the information we have, we need to be aware of who we are, where we have come from, and how that is influencing our understanding (….) By foregrounding both positionality and reflexive processes, we are able to be authentic to ourselves and our experiences. (Leigh, 2021, p.74)

While all these definitions are accurate in a broad sense, they highlight different features of reflexivity. This shows that the defining criteria of reflexivity, just like qualitative research, is not a simple task, not one that is easily characterised.

In their book, *Reflexivity in Social Research*, Whitaker and Atkinson (2021) critique the contemporary treatment of reflexivity in social research. In this they argue that given the diversity in the definitions of reflexivity in qualitative research literature there remains "a thin understanding of reflexivity" (p.22) which can lead to potentially misleading usages attached to the term.

Firstly, that many references to reflexivity in most contemporary social research appear to be symbolic and ritualistic rather than a true and critical reflection of their research. Janesick (1994) describes such claims of reflexivity as "methodolatry" which is a "ritualised acknowledgement of epistemological and methodological literature, accompanied by citations to canonical authors" (p.210). This means that reflexivity in such work is largely treated as a textual practice that does not fully consider its implications in a broader context and/or how it truly relates to the research area under investigation.

Secondly, that practices of reflexivity in some qualitative research are largely portrayed as a personal methodological choice on the part of the researcher. This is often implied via confessional revelations of the researcher's biography and personal, even emotional, engagement with the research. This personalisation of research produces sites of "self-congratulatory narcissistic reflection" (Whitaker and Atkinson, 2021, p.81). Having said that, personal and autobiographical reflection certainly has its place within the research process (explained later), however it becomes dysfunctional when "self-examination is transformed into self-regard, or self-absorption" because it reduces the intricacies of reflexivity into an individualistic act (Whitaker and Atkinson, 2021, p.80). As Finlay (2002, p.532) warned, "the researcher treads a cliff edge where it is all too easy to fall into an infinite regress of excessive self-analysis". In this regard, Whitaker and Atkinson (2021) argue that when reflexivity is treated as a methodological and personal venture "insufficient attention is paid to the epistemic and collective aspects of research reflexivity" (p.79). Instead:

> the intellectual task for all social researchers is to comprehend and work through the unavoidable reflexivity of their work. An important step in that intellectual process is also the recognition that 'reflexive' research is not a matter of virtue signalling, nor of purely personal choices. The issues of reflexivity are pervasive. (Whitaker and Atkinson 2021, p.3)

What Whitaker and Atkinson (2021) mean here is that reflexivity should not be treated like a methodological option or a textual acknowledgment, as it is an important and inevitable feature of all research. Because of that, meanings of reflexivity cannot be reduced to a basic summary, definition or formula. Whitaker and Atkinson (2021) seek to clarify the misconception that reflexivity corresponds to reflective practices (as a personal methodological choice), and it certainly should not be confused with introspection or autobiographical confessions.

In an attempt to make sense of these variations and to help clarify potential (common) misunderstandings, Whitaker and Atkinson (2021) further examine the fundamental meaning of reflexivity through what they call 'epistemic reflexivity'. They introduce this notion as a "generic" umbrella term that encompasses all aspects of reflexivity "framed by the disciplinary presuppositions and methodological prescriptions that are brought to bear" (2021 p.12). Whitaker and Atkinson (2021) point out that while the term was 'shamelessly' borrowed from Bourdieu's (1990) original concept, they do not necessarily endorse all his specific arguments. Where they align with Bourdieu is on the importance of re-rooting the view that reflexivity should be regarded as a collective matter, not one of individual or personal choice.

The principle of epistemic reflexivity illustrates that "knowledge-production is grounded in multiple relationships and engagements that encompass the researcher and the research participants, the researcher's community of practice, and networks of technique and method" (Whitaker and Atkinson 2021, p.65). More specifically, this indicates that "the methods used to describe, classify and measure phenomena contribute to the construction of those phenomena themselves" (p.37). In other words, since reflexivity is an unavoidable feature in all research, the methods used will reflexively influence the types of phenomena that are identified and measured.

While all types of reflexivity are epistemic, this broad denotation needs to be examined in a detailed manner for it to be useful. Whitaker and Atkinson (2021) address this in more detail through discussing the following sources of reflexivity: disciplinary reflexivity; methodological reflexivity; reflexivity of membership; textual reflexivity; and positional reflexivity. These

types are based on "the mutual implications of *what* one studies and *how* one studies it" (p.25).

Working from this epistemological frame of reference, I will consider elements of reflexivity within this project through a discussion of the research process which will include: situating the researcher, positionality and access: outsider vs. insider, the interplay between strangeness and familiarity, data analysis, participant self-reflexivity before turning into the more common descriptions of research methods: data collection and ethics. This is an attempt to respond to Whitaker and Atkinson's (2021) critique in my own work. As such, it might read a bit longer than the usual discussions of such a process.

3.4 The Research Process

This section will describe the research journey and how it occurred over time. To provide clarity, the process is presented in a chronologically linear fashion. However, it is important to acknowledge that research is an iterative, dynamic and cyclical process (Matthews, 2021). Taylor (2014, p.182) stated that qualitative researchers are "encouraged to view the analysis of material as a recursive and iterative exercise. That is working back and forth between data and theory, the understanding and questioning of the data". This means that the result of each of these iterations or rounds of analysis is used as a starting point for the subsequent line of enquiry. This iterative, dynamic and cyclical process is quite challenging as it requires researchers to actively make links to the ontological, epistemological, methodological, and theoretical assumptions of their research project, as well as to existing literature. Considering this, and through an ongoing interaction between data, theory, and experiences at various stages in this text, some elements will shift in and out of focus, depending on the emphasis of my analysis at the time.

Initially, this project was set out to explore the relationship between ringside medical personnel and combat sport athletes. Specifically, how medical care is administered, experienced, and understood in a variety of combat sports, by considering the relationships

and perceptions of both athletes and the people who provide medical care within such settings.

I started this process by drawing upon extant literature around the medicalisation of sport and pain and injury and medical regulation in combat sports more broadly. From that, I produced an early document that served as an academic justification for my project as well as an early version of the typology of medical support presented in the literature review (Section 2.3, p.19). This helped me foreshadow the initial research questions I was set to explore:

- What is the relationship dynamic between fighters and ringside medical personnel?
- What are the fighters' perceptions of the 'culture of risk'?
- Are ringside medical personnel in a position to promote 'sensible risks'?
- Is there a 'culture of precaution'?

However, following some preliminary data analysis at early stages of the project, it became evident that there were other, more important, critical issues that dominated combat sport spaces away from the limited contexts of 'fight' events. These issues particularly pertained to how combat sport athletes thought about, understood and managed their experiences with risk, pain and injury. Also, it was quite apparent that what I was finding in my observations of ringside medical personnel was relatively similar to what has already been published (Channon, Matthews and Hillier, 2020a; 2020b; 2021). This shift in my research represented an opportunity to explore the circulation of (lay) medical knowledge in non-medical settings.

The above research questions *guided* the basis for deciding what I thought I ought to investigate in the field and the data collection methods I intended to use. In other words, they are not fixed hypotheses waiting to be tested. Rather, they were 'foreshadowed problems' (Malinowski, 1922) that are open to refinement, reconsideration and transformation. In particular, the focus on team-doctoring that has been highlighted in the preceding chapters is a clear indication of this. The attention upon this idea, which has become the central focus of this thesis, was not foreseen at the beginning of this work. It has emerged as I have developed my understanding of the extant literature, collected data and became more

confident in the methodological opportunities that my place in the research setting afforded me. Indeed, as the project progressed, it became increasingly clear that team-doctoring could usefully be explored via various empirical sub-focuses. The most clear of these sub-focuses is within Chapter Five which explores team-doctoring and concussion. Collecting this data involved reflecting back on previous interviews to see where important elements around this topic had been discussed and not necessarily focused on in detail, ensuring that in future interviews this topic was discussed and in a number of cases re-interviewing people. This also happened in relation to a focus on sportswomen's health issues, although for clarity and coherence, this data does not appear in this thesis. There was something of a phasic nature to this process whereby at different times there, were overlapping but, distinctive focuses to the data I was collecting:

- Phase 1 (February, 2019) – Observations and interviews focused on ringside medical personnel.
- Phase 2 (April, 2019) – Increasing focus on how athletes and coaches 'did' medical care away from fight medics.
- Phase 3 (September, 2019) – Project formally shifts to focus on team-doctoring.
- Phase 4 (March, 2020) – Specific empirical focus on how team-doctoring was connected to issues around pain and injury. Weight cutting and concussion were two initial areas of focus in this regard.
- Phase 5 (March, 2020) – Concussion and brain injuries becomes a discrete focus in interviews and academic reading reflections this.
- Phase 6 (September, 2020) – Phase 5 demonstrated some of the ways the team-doctoring was limited. These limitations, especially in relation to the coaches lay knowledge or lack thereof, become a broad target of focus.
- Phase 7 (January, 2021) – Due to the largely male dominated nature of the research environment, a focus on sportswomen's health issues becomes something of interest.
- Phase 8 (March, 2021) – The thesis is written up while further supplementary interviews are conducted with woman fighters.

- Phase 9 (Feb, 2023) – The data on sportswomen extended the analysis within the thesis beyond what was deemed to be coherent and it was therefore removed to maintain clarity in what is presented here.

As can be seen from this rather rough outline, the foreshadowed problems which framed the start of this project shifted into various conceptual and empirical focuses. This meant that the analysis presented here was refined and consolidated throughout the data collection and analysis process and into the final stages of writing up the thesis. This is discussed in more detail in relation to my use of Blumer's (1968) notion of sensitising concepts in section 3.4.3 below and is outlined further in sections 3.4.3.1-2. This overarching and unprescriptive way of considering analysis was an ongoing process across the PhD. It is then impractical to try to trace all of this process, but certainly key moments in it can be sketched out as I have done above and below. As the project moved through these phases so my position as a researcher shifted within the field and in relation to my participants. It is to this movement that I turn to in the following sections.

3.4.1 Situating the Researcher

Berger (2015) stated that qualitative research is partially based on the assumption that complete detachment on the part of the researcher is unescapable (even if desirable) and that they play and important role in entire research process and analysis. As such, researchers are "the research instrument par excellence "(Hammersley and Atkinson, 1995, p.19) – this means that their role in the research process is vital to understanding how their involvement shapes the data. In her discussion about the role of reflexivity in qualitative research, Horsburgh (2003, p.309) emphasised that:

Given that the researcher is, in this view, intimately involved in both the process and product of the research enterprise, it is necessary for the reader to evaluate the extent to which an author identifies and explicates their involvement and its potential or actual effect upon the findings.

Here, Horsburgh (2003) highlights the need for researchers to address their role in the co-construction of knowledge within the environment being investigated. This is because different researchers may interpret data differently based on their background, experiences, skills, and interests.

To put things into perspective, for instance, a research project is generally situated in particular contexts which will likely shape and inform the parameters and/or questions a researcher might choose to address. Within this, the researcher is also situated, i.e. brings particular personal characteristics to the research project. In this light, what follows is an attempt to acknowledge my 'situatedness' within this project:

I always liked playing sports. Growing up, my parents were heavily pro sports and they encouraged me to participate in any sport that sparked my interest. Throughout the years I took up karate, taekwondo, swimming, ice skating, horse riding and shooting. Although competent, I had no interest in competing and, while encouraged, was not pressured by my parents or coaches to do so. This relatively 'healthy' environment made me enjoy the 'playing' aspect of sport as a child.

My 'proper' introduction to combat sports was not until my master's degree in 2014. I got peer pressured by a group of friends to sign up for boxing and kickboxing classes at a local combat sports gym. A few months in, my friends trickled away, and I was pretty much the 'last woman standing'. The sole reason that made me go back was that I was not good at it and the thrill of trying to prove myself otherwise intrigued me. I moved back home shortly after I finished my degree and joined a combat sports gym next to my work place. They taught a variety of combat sports but were mainly known for their Muay Thai. I did not know anything about it and decided to give it a shot. That thrill creeped in again, I got better and eventually started competing (2015). As time passed, I became more involved and started working there part-time, coaching and assisting children's and beginners' sessions.

Away from sport, and before embarking on this PhD, I was a clinical scientist by profession and worked in hospital healthcare policies. I also worked as a certified first responder and medical technician in emergency care. So, when I had the opportunity to conduct research

that married healthcare and combat sports, I seized the moment. In this regard, some elements of my medical background have helped shape and inform some of the analysis that follows.

In order to continue my 'personal' involvement in the sport and balancing it with my PhD commitments, I have since joined a combat sports gym closer to the University where this research was being conducted. I was able to quickly establish trusting relationships with 'core' members after training there regularly for around five months. This also coincided with the time I started representing the team in competitions, which demonstrates to some degree my acceptance as 'part of the team'. With that, part of my new-found affiliation as an 'active' fighter for this club meant that I was often a member of their corner/backstage team at combat sport events.

However, as a Middle Eastern, Muslim woman, researching in a Western setting that is largely the preserve of men (similar to that described by Matthews, 2018), I was aware that my presence might alter some established patterns of interaction. But given my continuous and active engagement with people within such spaces, I started to develop similar speech patterns, mannerisms, and cultural norms that pertained to that group. It is important to note that those behaviours were not intentionally adopted for a desire to 'fit in'; rather they were primarily part of a normal process of acquiring membership of that subculture (enculturing) through the production of actions that others recognised and affirmed as constitutive of competence. With that, my cultural differences, although present, became less apparent. The relationships and tensions I am interested in exploring have to do with the intricacies around locating myself as an 'insider' and 'outsider', which largely help guide this project's methodology.

3.4.2 Positionality and Access: Outsider vs. Insider

After ethics approval was granted, I started my data collection with observations in combat sport events. Initial entry to the field was mainly established through personal access and individual rapport. My active involvement in the Muay Thai scene for over 8 years, as a

spectator and competitor (8 wins, 2 losses, 0 draws), made it relatively easy to identify with and access members of that particular community. As I can conform with the cultural norms within such spaces, I believe that my acceptance as a cultural 'insider' was fairly simple. This provided relatively unhindered access to observations and interviews with key members.

As a starting point, I attended events (advertised online and through contacts) as an unobtrusive observer, and when the opportunity presented itself, asked for possible participant observation, mainly from medics. This, as mentioned earlier, is because this research study was initially set to explore the relationships between combat sport athletes and ringside medical personnel. As such, initial observational access focused on shadowing ringside medical personnel in combat sport events, and, because I was situated at the ringside, I was able to establish relationships and build rapport with referees, coaches, fighters, promoters and judges who typically also had experience in other aspects of combat sports. After spending a considerable amount of time in the field, I was often granted free entry to events through my newly established relationships with particular gatekeepers.

It is important to note that I was an active fighter for the majority of the data collection period. Being affiliated to a club that regularly participated in regional shows came with its own set of subcultural challenges. For example, a small number of fighters were initially apprehensive to offer their accounts for fears that I might disclose their weaknesses with or reveal their training tactics to members within my club where they could have potential 'matches' with. This was managed by ensuring them that their privacy is taken seriously given the nature of the study. I noticed a similar apprehension from woman fighters who competed at the same weight category as I did. Such uncertainties also affected some observational access. For example, in a particular incident, a promoter abruptly declined access to his show, despite initial approval. It was then brought to my attention that he was not in good terms with my coach. Given the sensitivity of these situations, I tended to not directly ask for access, especially for gym observations, unless offered by gatekeepers or when I was certain that access was permissible (particularly from gyms that my club had friendly rather than antagonistic relationships with).

This is also when I started to notice that the academic ideas (e.g. team-doctoring, culture of risk) I was interested in exploring seemed to align with some of the practices and interactions that were happening at the gym where I trained. Being embedded in such social spaces has given me the opportunity to witness, experience, think through and reflect on most of the concepts that I was reading and intending to explore, which was very helpful. As such, I decided to 'formally' include these observations and lived experiences into my data collection process. Especially since such interactions were not very apparent or obvious during event observations. This helped inform some of my interview questions and was largely connected to why the project has shifted. However, these observations carried some potential challenges that made me re-consider my work/life balance. As at early stages of the project this 'relatability' aspect became mentally taxing and caused some temporary instabilities in my personal life. While exciting, I found it difficult to 'switch off' – my personal 'free' time felt like work. Similarly, drawing on their experiences in sport ethnography, Rossing and Scott (2016) noted that while researching something you love can create some epistemological advantage, it can also 'take the fun out of' it.

As such, I learnt to set myself some boundaries, while they were not clear cut and changed over time as the project progressed, they served as a heuristic tool in helping me navigate my personal engagement in the sport and myself as a researcher more effectively. The purpose of this demarcation was not about being able to be either one or the other, rather it is about acknowledging and managing my 'two side of the same coin-ness'. That is, emphasising one part of myself at a specific given time, which is the observer or the participant. This helped me think and write about the interactions I was observing with more clarity while also being able to enjoy my personal involvement in the sport. The process of shifting from one boundary to the other was purposeful and disciplined, led by data intertwined with academic ideas.

Following some health complications which forced me to retire from competing, my position at the club has shifted. I was no longer an active fighter and had more of a managerial role. I trained occasionally, but I mainly coached children's and beginners' classes and assisted during the 'fighters only' sessions. This time round, *I felt more like an observer than an active*

participant. This allowed me to witness the interactions I was interested in exploring from different vantage points.

Alongside these observations. I started interviewing fighters, mainly amateur fighters from my gym to start with. I then branched out to sparring partners and friends I trained with from other gyms, and participants I met in combat sport events. This comprised the majority of my sample source. This is also when I created a social media account (Instagram) as I found it to be very useful in keeping touch with the participants that I met and stay updated about their training journeys and upcoming fights.

I was also the University's Thai boxing club president for one academic year (2019/2020). This gave me access to even more participants and it also meant that I started coaching. While we already had a dedicated and far more qualified coach, my main responsibility was to assist the main coach due to the large number of students present in training sessions. Which then eventually progressed into coaching and leading sessions for beginners. This also meant that I met fighters from other universities through inter-clubs[1] which subsequently increased my sample size.

However, this level of 'authority' meant that some of the fighters at the club felt a bit apprehensive about approaching me to speak about some of their experiences with pain, risk and injury, particularly ones they have sustained during training, as they were under the impression that I might think that they were "not tough or good enough to do Muay Thai" (Elsie[2]) or 'snitch' on them to the coach. While I was largely aware of it and tried my best to be as approachable as possible, this was revealed to me through informal chats and particular interviews after my 'presidency' ended. I have also had some similar 'confessions' from participants from a previous gym that I have coached at. As such, in certain situations, my increased involvement and/or coaching positions could have imposed some limitations to the study.

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[1] Non-decision and controlled sparring sessions designed to provide athletes with the experience of competing against people from other gyms.
[2] An amateur Muay Thai fighter. Picked up the sport at university and has been training for 3 years and competed in a few local events.

Considering the preceding discussions, in some stages of the project, my status as a fighter *largely* preceded that of researcher. By presenting myself as a fighter and having the physical skills to back this up, I believe that participants were more comfortable to speak about certain experiences and/or 'controversial' issues that might be left unspoken in the presence of cultural 'outsiders'. In this regard, I was able to align myself with participants' experiences of injury and health-compromising behaviours. It is important to note that accepting and enduring health-compromising practices was certainly not a designated principle of this project methodology. Yet, I argue that it did give opportunities to easily gain access to and speak about experiences which might have been more challenging to collect for someone with less experience of combat sports. As such, my own engagement in Muay Thai was a fundamental element in the production of the data presented in this thesis.

This also brought about a degree of 'intimate familiarity' (Whyte 1966 [1943]) that helped me further understand the lives and the worlds of the people I was researching, which can be reduced and limited when employing simplistic inflexible methods. Having said that, intimate familiarity, ultimately, has its limitations. Matthews (2021) usefully describes this using the notion of 'walking in someone else's shoes':

> Even if I were to 'walk in your shoes' that would involve *my* feet and *my* way of walking – meaning that this process would still be necessarily shaped by *my* way of understanding and interpreting the world. Yet, if as Polanyi says, "we know more than we can tell", we must accept that simply getting to know someone better by means of language (interviewing, surveying) has its limitations. (p.75, emphasis in original)

These interviews with fighters mainly focused on trying to tease out some of the ideas outlined in the interview guide (Appendix 1). I transcribed the interviews as I went along in order to reflect on of the conversations we had, better my interviewing skills, and refine my analysis. I always discussed the emergent findings (from both interviews and observations) with my lead supervisor, in supervisory meetings, where he largely acted to encourage clarification over the use of concepts and data. This often took the course of lengthy discussions where the limitations of both data and extant literature were considered. The data was read, reread and reflected in a cyclical fashion to help explore its relation to key

literature. This process highlighted apparent problems in the literature which could be neatly addressed by the data that was being collected and also opportunities for conceptual refinement and redevelopment. This data analysis process was ongoing throughout the PhD but the emphasis slightly changed depending on the study I was focusing on. I will explain these changes in emphasis in the following section.

3.4.3 Data analysis

This data was analysed through a process informed by Blumer's (1969) discussion of 'sensitising concepts', Prus (1996, p.132) neatly captures the use of these ideas:

> Blumer uses the term sensitizing concepts to refer to these tentative, analytical notions. Sensitizing concepts suggest subsequent lines of inquiry and assessment, but in each case the researcher has the obligation of making the concept match up with the circumstances at hand rather than making the data fit the concept.

In this regard, Blumer encourages scholars to ensure a relentless interaction between their academic ideas about the social world and data. In practice, the specifics of this process were worked out over the course of a long-term supervisory relationship. Therefore, the interpretation and analysis of the data presented in this thesis (even qualitative data in general) should not be viewed as a distinctive act, separate from the rest of the research process. Hence, providing a formulaic account of this process would be impossible and not useful. Instead, it followed an emergent and shifting, yet systematic, disciplined and coherent path (Matthews, 2021).

The practical steps I took to analyse the data began by creating a comprehensive 'post-interview' check-list document which included the following sections: participant name, respective sport, pseudonym, initial thoughts, transcripts, main topics and other. The initial thoughts section was completed after each interview. In this I included brief notes of how I felt the interview went (e.g. useful stuff on concussion, not so much on weight cutting) along with some basic physical features in order to help me remember how the participant looked

(e.g. bright pink hair). The latter was particularly useful in helping me recollect the interview, especially as the interview sample got larger. The transcript section included notes and excerpts of the common ideas that I came across throughout the transcription process. This information was further edited during the data analysis process, especially when I revisited the data at different stages post-transcription. This helped me review, reduce and eliminate possible repetitions as well as narrow down some conceptual similarities. The main topics section was used to highlight if an interview covered a main topic I was interested in exploring (e.g. concussion, weight cutting; each of which was colour coded). The purpose of this was to facilitate locating relevant data sets that corresponded with some targeted information (and subsequently each findings chapter: team-doctoring, concussion). Given that certain studies shifted in an out of focus at different stages throughout the research process, this sign-posting system was especially useful in helping me 'pick-up where I left off'. The other section included any relevant information that did not fit in any of the criteria mentioned above. It is perhaps worth noting that this list was not as refined when I initially embarked on this project. It is a compilation of a process that evolved over time as I added, removed, and/or edited sections as the project progressed. The main purpose of this document was to help me organise, manage and work though this large data set in a systematic and efficient way at any given time.

A similar, yet less exhaustive list, was created for observational data: event name, date and location, initial thoughts, stories, main topics, and other. The stories section included brief notes and excerpts highlighting some of the main interactions that happened at the time.

3.4.3.1 What is Team-Doctoring?

The first year of my PhD served as the preliminary data collection period. The reason behind this was to give me time to familiarise myself with the field and build rapport without having to worry about time constrains. In other words, by 'casting a wide net' I was able to comfortably practice, reflect on, and develop my skills as a researcher without feeling pressured to produce 'good' data at early stages of the project. This opportunity allowed me to learn from my 'mistakes'. For example, there were some difficulties in managing the

number of interviews and observations scheduled per week. They were initially scheduled within close proximity, with hardly any breaks in between, which was overwhelming. This was managed by spacing them out to allow enough time to transcribe and reflect on the data being collected.

During this process, it became apparent at early stages of data collection and preliminary data analysis (for the first year report) that team-doctoring was central to the athletes' experiences with pain, risk and injury (in both in interviews and observations). Particularly in relation to concussion. Leading on from this, I wanted to explore their understandings and perceptions in that regard before proceeding with interviewing ringside medical personnel. As such, I started the second year of the PhD interviewing and re-interviewing participants with a more refined focus on concussion.

Considering this, the chapter was initially set to explore team-doctoring through the lens of concussion. However, during the data analysis process I have come to realise that I was trying to condense a lot of issues into one chapter. In other words, the data needed more room to 'breathe'. So in attempt to reach a level of 'meaningful coherence' (Tracey, 2010), I refocused the chapter on defining, exploring and contextualising the process of team-doctoring. I started this process by writing academic 'building blocks' that helped inform my first data-led paper (which became the analysis for Chapter Four): performance ideologies, lay knowledge, sportsnets and thought collectives. It is throughout this process that I realised that my whole project has shifted and this is when I decided to dedicate my research on team-doctoring, as it needed to be a whole study in its own right. In other words, the issues that I was interested in exploring in relation to team-doctoring could not have been fulfilled and addressed appropriately in a single findings chapter. Also, the interactions I was initially interested in exploring between ringside medical personnel and combat sport athletes were limited and short-lived. The participants had some difficulty recalling these interactions given their transient nature. Instead, given that the majority of the participants did not have access to club affiliated medical support, they increasingly spoke about how they tended to manage their experiences with risk, pain and injury through the process of team-doctoring. As for my 'medics' study, I do not think that the data collection or observations went in vain, as mentioned earlier, the access, reflections and insights that I gained from that were invaluable.

3.4.3.2 The Limitations of Team-Doctoring: Fighters' Understanding of Concussion

The second data-led paper, which became the analysis for Chapter Five, focused on exploring the participants' understanding of concussion as one of the limitations of team-doctoring. The data analysis process was similar to the one described above. As such, the data was read, reread and reflected in a cyclical fashion to help explore its relation to key literature on concussion, medical knowledge and expertise. The process of writing this chapter revealed some logical tensions between concepts and data, which were eventually overcome through deeper reading around uncertainty/certainty and a refinement of Schutz's (1970) work on the phenomenology of expertise and the construction of knowledge.

The data analysis process for this chapter has allowed me to reflect on my participants' stories and experiences in a way where I was able to relate with their physical and emotional challenges beyond simply empathising with them. I saw myself through their words. This reflexive process has led me to think about concussion differently. In particular, my personal experience with concussion provided an interesting viewpoint where I was able to work towards an intersubjective understanding of the normalised acceptance of practices that involved enduring repetitive blows to the head. While being a fighter is not a prerequisite for conducting such research, nor does it provide some sort of privileged insights; I argue that my relative closeness to the experiences that are the focus of this study was one of the key elements in the production of the data presented in this chapter.

3.4.4 The Interplay Between Strangeness and Familiarity

The interaction between strangeness and familiarity is often discussed in methodological literature on ethnographic research (Coffey, 1999; Delamont and Atkinson, 2021; Donnelly, 2006; Gordon, Holland and Lahlema, 2001; Whitaker and Atkinson,2021). In their discussion about reflexivity of membership, Whitaker and Atkinson (2021, p.63) argue that "Knowledge, expertise and experience can directly impinge on the formulation of research perspectives and the interpretation of ethnographic exploration". This means that researchers that study their own community are more likely to overlook tacit activities as potential research

phenomena because they are too familiar with them. However, these issues are not necessarily difficult to overcome, using Delamont and Atkinson's (2021) language, it is a matter of 'fighting familiarity'.

Given my embodied involvement in the sport, Elias's (1987) 'detour via detachment' was used as a means of reflecting upon the data used in this project. This was mainly managed through lengthy discussions with the lead supervisor about how my position in the field as a fighter contributed to shaping the production of knowledge at various stages. This enabled me to be aware of moments when I had normalised certain health-compromising practices such as enduring physical damage (e.g. repeated blows to the head) and engaging in potentially dangerous weight cutting methods. To ensure the 'familiar' could become 'strange', these conversations were designed to assure that I was able to critically 'see' such practices and their social production within the spaces I was so comfortable within. In other words, my closeness meant that I often took for granted my tacit and descriptive knowledge of these spaces.

Developing such reflexivity at different stages of the research journey have helped me access "blind spots" in my own identity that I was not able to comprehensively execute as an "individual knower" (Pels, 2000, p.17). I had some notable successes during this process, but this does not change the fact that I occupied an 'insider' or involved position and this should be considered when assessing the strengths and limitations of the data.

Yet there are also advantages of being a cultural outsider, particularly as this can give critical distance in observing a field. That said, a cultural outsider is perhaps more likely to observe and question practices and behaviours that may be familiar or taken for granted, by an already encultured researcher (Sparkes and Smith, 2016). Take the following exchange between myself and Will, a friend and old work colleague whom I invited to attend a local fight show after expressing interest in doing some ringside medical work:

> I pretty much had to narrate the whole show to Will. I didn't mind that though, he was in a very unfamiliar territory. It was his first time watching Muay Thai let alone attend a fight show. I found his interjections of surprise and shock amusing. Perhaps a little bit extra at times. His exaggerated remarks were to be expected though, after all, he worked in a

trauma unit. At one point, a fighter cut his opponent's temple with an overhand left elbow. The crowd roared. As I stood at the edge of my seat throwing my fist in the air yelling "BRILLIANT! THAT'S IT!", Will looked at me concerningly and said "why are you happy? They should surely stop this shouldn't they?". Unphased, I said "erm, not really, it depends. Cause as you can see it's [the cut] not blocking his field of vision yet so he should be alright. It's not that big anyway". Will replied "but it's still a facial laceration Reem, it'll only gonna get bigger and – OH MY GOD! He's [corner man] lathering Vaseline all over it now look, that's an infection waiting to happen!". I laughed "yeah I know, it'll be a pain to irrigate right? … but they gotta do it to control the bleeding so he can last the round". Will jokingly shook my shoulder as if to 'wake me up' and said "unbelievable – are you even listening to yourself?". [Fieldnote, Spring 2019]

The key here is that whether observing fields or speaking to participants from the inside, outside or somewhere in between, each position must be considered in terms of its specific possibilities, challenges and limitations, and always in relation to others in the field who will – despite the best of efforts and intentions– make their own interpretations of their authenticity and trustworthiness as a researcher.

3.4.5 Participant Self-Reflexivity

Way, Zwier and Tracy (2015, p.721) argue that "the reflection and self-interrogation of participants' understandings is rich and often unexamined". This means that researchers are often too focused on "listening for understanding" that they tend to overlook instances where participants begin to recognise, reflect on and sometimes make changes to their own preconceived assumptions and perspectives (Way, Zwier and Tracy, 2015, p.720). These situations or "flickers of transformation" (Tracy and Rivera, 2010, p.7) reveal the manners in which participants' "talk shifted on the spot to account for their uncertainty and the potentially unfinished or underdeveloped nature of their beliefs about a subject". Highlighting such critical incidents of the participants' own process of self-reflexivity and sensemaking can "yield new data which throw fresh light on the investigation and which provide a spur for deeper and richer analyses" (Bloor, 2001, p. 395). Way, Zwier and Tracy

(2015) consider the interactional practices that lead to flickers of transformation in dialogical interviewing[3]. In this they identify a set of specific dialogical approaches that aided in creating a context that fosters a supportive environment for expressing and exploring ideas. These include 1) probing questions, 2) member reflections, and 3) counterfactual prompting (see reference for a more detailed discussion on each approach). Employing such strategies provide space for "questioning, change, and transformation by encouraging individuals to authentically engage with others and suspend their judgments and assumptions" (Way, Zwier and Tracy, 2015, p.721). In other words, by communicating a safe space to hear themselves articulate their thoughts, participants have a chance to interrogate and/or renegotiate assumptions, opinions, and uncertainties they may be unaware they are holding. As such, allowing participants to engage in a process of sensemaking can be a useful methodological tool for identifying discourses that shape their way thinking (Way, Zwier and Tracy, 2015).

Accessing these moments of self-reflexivity requires time, rapport and trust, as "dialogue is facilitated when participants feel accepted" (Way, Zwier and Tracy, 2015, p.726). Achieving this is crucial, as encouraging a space for non-judgmental engagement and trust allows participants to feel comfortable to question themselves and enunciate their own uncertainties. As Weick (1989, p. 247) puts it "how can I know what I think until I see what I say?".

Way, Zwier and Tracy (2015) also noted that the interactional approaches they have outlined are there to provide conceptual clarity rather than a how-to guide. Indeed, they highlighted that the exploratory nature of their study was achieved after engaging in the process of reflexivity and transformation in their own thinking and ways of knowing. As such, they did not intentionally engage in these dialogical strategies when they embarked on their studies. Likewise, in this project, I used similar dialogical tactics without actively knowing that I did them. In other words, I did not purposefully employ them to capture 'flickers of transformation' in my participants' thinking. Yet I came to realise that such moments did help guide and shape my analysis in different ways.

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[3] In one respect all interviewing is dialogical. However, Way, Zwier and Tracy's (2015) work focuses on the dialogical nature of interviews.

Considering this, alongside the formal supplementary interviews, the relationships that I developed resulted in participants contacting me informally to continue discussions. Such opportunities, I believe, were a product of some of the forthright but considered ways I sought to 'push' or encourage the fighters to reflect upon their relation to risky body cultures, brain injuries and taken for granted assumptions. For example, given that one of the conceptual points of departure in the Chapter Five was the interdependence of uncertainty and certainty in knowledge (Atkinson, 1984), I often prompted participants to justify or provide evidence that supported claims around certainty. My place as an 'insider' combined with closeness and trust that I developed with the participants ensured these conversations were productive (helped the participants reflect and sometimes reconsider their initial thoughts) rather than provocative (undermined the participants accounts in problematic and potentially mean ways). In particular situations, such strategies have led to 'flickers of transformation' where some participants 'changed their mind' or questioned themselves about certain perspectives. This 'change' is due to the shifting context of our relationship and the topics being discussed over time. In short, the interviews themselves, the supplementary interviews and my continued presence in the field enabled participants to acknowledge the limitations of their knowledge and, as such, enable data to be collected to demonstrate the processual rather than static nature of understandings and experiences to come to the fore.

3.5 Data Collection

A total of 322 hours were spent conducting observational research across 31 combat sport events (5 multidisciplinary, 1 MMA, 4 boxing, and 21 Muay Thai/kickboxing) and 3 training/sparring sessions at unaffiliated gyms (26 hours, across 4 gyms, 1 MMA/boxing and 2 kickboxing/ boxing, and 1 mixed discipline). Alongside this, I exclusively trained in a combat sport gym 5 to 6 times a week for around 2 to 3 hours each day over the course of 18 months. These hours were not 'officially' recorded because my engagement in that particular space, at the time, was largely for personal rather than observational purposes. As such, field notes were recorded whenever I happened to witness relevant events and/or interactions that seemed to align with the academic ideas (along with the emerging data) I was exploring at

different stages during that time. Observational hours were officially recorded after my position at the gym has shifted (as discussed earlier). As such, I coached and trained 3 to 4 times a week for around 4-6 hours each day over the course of 12 months (782 hours).

Observational data was initially recorded as field notes typed and/or recorded on my phone and then expanded upon at home or a neutral public space. All participants (of recorded observations and interviews) provided written and verbal consent and were given pseudonyms to maintain their anonymity.

I found my phone to be a particularly valuable research tool for recording fieldnotes during these observations. As it enabled me to take notes (without drawing unnecessary attention) and even voice record my own initial observations. This has helped me focus on other more important social and interactional aspects of these observations. While I understand the importance of writing field notes as soon as possible after being in the field (Emerson et al., 2011), I preferred to wait until after the event (typically the next day as these shows extend till later hours) and write at home or any common social space where writing did not seem culturally strange. Ultimately, these fieldnotes served as means of recording observations and a space for reflection and analysis during the research process (Okley, 2008).

The interview sample comprised of fighters from different combat sport disciplines (n = 90+ 21 supplementary) including Muay Thai (21 men, 28 women), kickboxing (5 men, 3 women), MMA (5 men, 2 women), boxing (6 men, 2 women), Brazilian Jiu-Jitsu (BJJ, 5 men, 8 women), Taekwondo (2 women), and Karate (1 woman) with some being active fighters and coaches (n = 20), and coaches/referees (3 men, 1 kickboxing/boxing and 2 Muay Thai), along with 2 (men) ring side physicians. The interviews lasted around 30 minutes to two hours and took place in various locations such as private areas in cafes, backstage at events, university meeting rooms, quite corners in gyms, and venue lobbies. Some interviews (n = 21) were conducted using online video conferencing applications. Online interviews were only conducted during the early stages of the COVID-19 pandemic, where in-person interviews were not permissible. Otherwise, in-person interviews were always favoured. Interviews were recorded with the consent of the interviewees and transcribed as soon as possible. None of the fighters interviewed in this study had access to club affiliated medical support.

3.6 Ethics

In terms of the ethical issues encountered by qualitative researchers, the majority of relevant research organisations and governing bodies produce codes of ethics that outline recommendations, guidelines and standards of what constitutes acceptable research practice. (Sumner, 2006). Much of the debate on the ethics of qualitative social research stems from tensions surrounding the acquisition of new knowledge and balancing that with the rights of the individuals or groups under investigation. As such, the researcher is expected to continually evaluate the need to collect data against the participants' rights to privacy, safety and autonomy. In other words, the basic premise here is that the research should not cause harm to participants. Having said that, the long-term effect of their participations are not as straightforward. In this project, participants could possibly discuss sensitive topics (e.g. violence, physical and substance abuse) that might cause them to be upset. Considering this, participants were made aware throughout the interview process that they did not have to answer questions they do not wish to. Also, I always had a list of appropriate mental health referrals to recommend for participants in case they expressed the need to talk to someone (Appendix 2).

A related principle is informed consent, which communicates the right for participants to know that they are being studied, the purpose of the research, and what is expected of them should they choose to take part. For this project, two consent forms have been produced (Appendices 3 and 4), one for interviews and another for observations. There are, of course, issues around who can and cannot give consent and situations where the validity of consent is questionable (e.g. gatekeepers with considerable power over potential participants where they are fearful of the consequences of not participating) (McKechnie, 2008). Informed consent also implies that the research is not covert, and therefore the concealing of the researcher's intentions or any form of deception is not acceptable (Jones, 2015). Having said that, it is essential to clarify the difference between covert research and deception (see Spicker, 2011 for more detail). Briefly, covert research is when a person does not disclose they are conducting research (Walker et al., 2006). For example, it is covert research when a researcher attends a public event and simply watches what people are doing, like a boxing bout or a football match. Conversely, deception is when the true nature of a researcher's

actions is purposefully not communicated to the participants. In this scenario, the researcher claims to be conducting one activity while actually conducting another (Spicker, 2011). Although some deceptive research is also covert, most is not. This is why covert research is often associated with deception (Davidson, 2006; Herrera, 1999; Homan, 1991; Jones, 2015).

Another important principle is respecting a participant's right to privacy. Researchers should inform their participants that they will not invade their privacy beyond what is required by the research and what they have consented to. (McKechnie, 2008). Especially when the study requires intrusive questioning about sensitive topics (e.g. illegal activity, potentially life-threatening health conditions). Researchers should also maintain confidentiality, by assuring participants that the data gathered will only be used for research purposes (Jones, 2015). This goes together with anonymity, where the identity of the participant will be protected and unidentifiable from the way in which the data is presented (Sumner, 2006).

As research studies are typically required to go through a formal assessment or evaluation to determine whether the research will be conducted ethically, gaining clearance from the University's ethics committee was essential before proceeding with data collection. Although relatively straightforward, this process brought up some safety measures that need to be addressed.

Given that some combat sport events tend to continue till late hours, it was agreed to provide my lead supervisor with a detailed itinerary before every observation and update him when arriving and leaving a venue. Similar precautionary measures were taken for interviews. To ensure both my safety and that of participants, interviews (planned or opportunistic) were to be held in neutral public spaces (e.g. cafes, gyms, backstage at events) and private settings were favoured due to the sensitive nature of the topics under discussion.

Because this study involved mixed methods that served different purposes, it was essential to produce separate informed consent forms (as mentioned earlier) and participant information sheets (Appendices 5 to 7). This issue was not apparent when the ethical clearance was granted. But was flagged up in a supervisory meeting after discussing an initial observation that unexpectedly turned from unobtrusive to participatory. Following this

notion, appropriate amendments were made, and the forms were resubmitted. Informed consent was always sought for interviews, but this was not the case in observational situations. The process of choosing whether or not informed consent was needed in particular observations was considered. As a baseline, no consent was taken when the observation was unobtrusive (e.g. watching fights), as the individuals being observed are willingly participating in public events where they know that they are going to be observed by a large number of people. Informed consent was sought as soon as there was direct contact with a potential participant, but this was not always the case. For example, while shadowing medics, I had some face-to-face encounters with the fighters they were treating. In these situations, consent was sought only if the data gathered from the exchange required that. It is ideal to always seek consent, especially when in doubt, but this process is not as obvious as portrayed in this example. Such encounters tend to be quick, fast-paced and brief and there is usually more than one person interacting with the medic and the fighter (e.g. coaches, parents, other fighters). I did not want the act of seeking consent to cause any more disturbance or unnecessary pressure. The medic is already in a challenging situation and the fighter is vulnerable. Therefore, in such circumstances, the safety of the fighter and the medics' ability to do their job was prioritised.

To maintain anonymity and confidentiality, before obtaining consent, participants were informed that the research information will be collected, analysed and reported anonymously so that they cannot be identified in any of the research data. In this effect, participants were assigned pseudonyms.

Chapter Four - What is Team-Doctoring?

4.0 Introduction

In this chapter, I begin to explore the process of team-doctoring in relation to sociocultural interactions, beliefs embedded within the combat sport subculture and the critical role it plays in shaping fighters' understandings of health and injury. Initially, to provide some context, this chapter started by describing the landscape of combat sport gyms. The aim here was to sketch out a broad picture of what these social spaces look like and the types of people that frequent them. Leading on from that, and in order to situate team-doctoring within such social settings, fighters' perceptions of their sport-related pain and injury experiences were explored. This was further contextualised by aligning ideas about Nixon's (1992) 'sportsnets' and Fleck's ([1935] 1979) 'thought collectives'. Here, it became evident that coaches occupied a central position within the process of team-doctoring. Accordingly, coach-led team-doctoring was further examined. This prompted a discussion of the fighters' rejection of 'outsider' medical knowledge which began to highlight some limitations of team-doctoring. The chapter concluded by describing the different ways in which fighters manage these limitations.

4.1 Combat Sport Spaces: Some Context

Each combat sport gym is unique – yet they all share similar key components (in terms of the general layout and type of people that regularly attend such spaces) where painting a picture of one can offer a partial glimpse into all. So to begin this chapter I will try to provide a feel for such spaces based on a broad description of the gyms I frequented and visited throughout the course of this study. This will help contextualise some of the data that follows.

Combat sports gyms are often small, local clubs, traditionally located in working class areas that usually focus most of the space and time within the gym to teaching their respective sport. They often consist of a matted area, surrounded by an assortment of worn out punching bags along with 1 or 2 boxing rings (and sometimes a cage). Some might have the

odd area that houses random basic gym equipment like a treadmill and some weights (barbells, weight plates, dumbbells). However, these areas were hardly used and largely neglected. These clubs are usually owned and run by one or (at most) two head coaches (typically men) who are more often than not are retired fighters. These coaches are central focal points of such gyms, they are chiefly involved in developing and 'policing' the gym culture, and they are almost always treated with respect and reverence.

Within these spaces, there is a 'core' group of 6–8 'active' fighters that attend 'main' training sessions on a daily basis along with 3–4 retired fighters that are at the centre of the club in terms of attending and setting the tone for these sessions. Sometimes these core fighters (after reaching a level of competence) help coach beginners and/or children's classes. There are also 'regular' members that attend sessions for recreational and fitness purposes rather than competing. The people that frequent these clubs are predominantly men.

These clubs had a martial arts aesthetic which sits in opposition to the commercial branding and marketing typically associated with large-chain fitness gyms. Although it might sound a little cliché, they had a resemblance akin to the stereotypical boxing gyms seen in popular boxing films like Rocky and Million Dollar Baby. The walls were littered with old and new fight posters, photos, medals and championship belts that belong to the coaches and the fighters who represented the club in different competitions throughout the years. This often untidy, slightly unorganised, stripped back, 'traditional' appearance provided the coaches and the people that regularly occupy such spaces a sense of authenticity and distinctiveness that is not captured in more contemporary gym set ups. And they are similar to the sorts of gyms that have been researched by a variety of scholars and within that research, the acceptance, and even enjoyment of pain and injury is a recurring feature (Abramson and Modzelewski, 2011; Channon, 2013; Curry, 1993; Matthews, 2016; 2018; 2020; Smith, 2008; Wacquant, 2004).

4.2 Managing Risk, Pain and Injury: The Context of Team-Doctoring

In these spaces, the ability to tolerate and endure experiences of risk, pain and injury was common and was often seen as a constitutive of competence. Johnny's[4] example is illustrative:

> **Johnny:** This is what you sign up for when you want to tek' someone's head off innit? they're not gonna stand there, like look at ya and let ya have it [laughs] that's not the point. There has to be an exchange you see. You gotta get used to tek' one before you land one duck! [laughs]. Like, I always say, anyone can punch but not everyone can fight, innit? Some lads 'ave mad skills on pads, and think they can fight cus of that, but then cry like little girls the second they get winded. And suddenly they make excuses and don't wana spar no more. So, if you really want it then you gotta put the work in. It's not easy work, like some days it's like proper hard graft you know? Like you gotta just bite on your gum shield and quite literally roll with the punches.

Ordinary 'run of the mill' ways of thinking about risk and (ill) health shaped how these athletes accepted the 'culture of risk' in their sport (Nixon, 1992). As with other research on similar sporting spaces (Curry, 1993; Hughes and Coakley, 1991; Matthews, 2020; Waldron and Krane, 2005), the normalisation of certain health-compromising behaviours was accepted as 'part of the game'.

This was evident in the way most fighters rationalised their experiences of pain and injury. These three examples are representative:

> **Hamid[5]:** [Injuries are] something us Muay Thai fighters class as normal. I presume that being in that gym, it's something that you gotta take up the chin. You know, Muay Thai is known to be a hard man's sport meaning if you get injured, you got to weather the storm kind of thing. If you watch traditional Muay Thai, it's not about who is the most technical but it's who's the toughest. It's who's the last man standing.

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[4] Retired fighter and coach in his late 40s. Competed in different combat sports (boxing, kick boxing and BJJ) and runs his own martial arts gym.
[5] Professional Muay Thai fighter in his 20s. Works part-time in a car repair shop.

Jayson[6]: So, you're always going to be sore. There's always going to be something. You're never going to be 100%. There's always going to be something that comes up. You're going to be sore. You'll have a little injury. You're going to be tired. You just gotta learn to deal with it.

Nathan[7]: You've been in the ring yourself, like you're not meant to show any like reaction, like, you know, when you check a kick and your face is all like 'oh that didn't hurt' you know. So you don't acknowledge the pain, you don't acknowledge them for landing a good strike. You know, you have to seem invulnerable. It's the combat sport mentality, innit? You have to be the toughest motherfucker in the room.

The athletes understood that their participation in combat sports involved their engagement in potentially risky practices. In other words, in such risky body cultures, athletes accepted that damaging their athletic bodies, for the pursuit of performance, is a normal part of the sport. These understandings were learned by the athletes as they progressed from beginner, to intermediate participant and were something of a prerequisite for those who wanted to compete.

The prevalence of this way of approaching their sports resulted in regular and various injuries. Cuts, bruises, black eyes, sprains, strains and many other injuries were so common place that they were seldom given much attention. Rather, the fighters seemed to manage them as efficiently as possible so they could keep training. Given that none of the athletes in this study had access to club affiliated medical support, they tended to deal with their injuries through the process of team-doctoring (Safai, 2003). The below examples from my observations are illustrative:

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[6] Professional Muay Thai fighter in his 20s. Holds several championship titles and competes regularly at an international level.
[7] BJJ blue belt in his 20s. works as a laboratory research assistant.

One of the boxers was asking Faisal[8] about his swollen knuckles. Faisal asked: "did you ice it?", the boxer nodded. Then he added: "ice it more then and for fuck's sake stop putting your wraps on too tight you knobhead! Move your fingers [boxer proceeds to move his fingers] urgh, it's hard to tell. I'm not an expert but I don't think its broken cus you still got a lot of mobility. I think its fluid build-up or scar tissue. Probably. Ice it the next couple of days and take it easy. Bottom line, don't worry too much I don't think it's that serious". [Fieldnotes, Winter 2020]

I couldn't tell what was going on in the other ring, but they definitely stopped sparring. Patrick[9], my sparring partner said: "Alfie[10] is down". I said: "what happened?", Patrick: "dunno, jus' carry on till the buzzer goes off". The buzzer went off, at this point everyone watched from afar. Alfie laid in the corner with his legs spread out and was struggling to breathe. The coach grabbed an inhaler from a 'first aid' bucket with a hand drawn red cross on it and said to him: "So am gonna use this inhaler on ye, its gonna help ye breath better, ok. You're fine, you're gonna be fine! its jus' adrenaline, took the best outta'ya". After the session I asked the coach if Alfie is going to be alright and he said: "dun worry I use it as placebo, it's empty, there's nuthin' in it". [Fieldnotes, Spring 2019]

These examples demonstrate that the health compromising behaviours that dominate risky body cultures are shaped via the process of team-doctoring (Safai, 2003). This can be problematic, especially in sportsnets that lack access to dedicated medical support, that as others have suggested (Safai, 2003; 2004; Walk 1997;2004), can present alternative definitions and negotiations of risk, health and performance.

In most combat sports spaces, the fighters' access to medical care was predominantly through their primary health care providers (general practitioners) – who are not part of their sportsnet. Interestingly, the fighters did have access to ringside medical personnel at fight

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[8] Retired kickboxer in his 50s. Has been running a boxing and kickboxing gym as a side project for the past 13 years. His main occupation is a teacher at a local college.
[9] Professional Muay Thai fighter in his mid 20s, works as a freelance contractor.
[10] Driving instructor and Professional Muay Thai fighter in his late 20s.

events during pre-fight screening; however, the tone for these interactions was often shaped by the need to be passed as 'fit to fight' which encouraged them to hide or otherwise downplay any medical problems (Channon, Matthews and Hillier, 2020a; 2020b; 2021).

Although the concept of team-doctoring was initially introduced by Safai (2003), it is yet to be thoroughly theorised or empirically described. Several scholars have explored elements of the medicalisation of sport and the athletic body to understand sociocultural factors that shape athletes' perceptions and experiences of risk, pain and injury (Malcolm, 2006;2009; Malcolm and Sheard, 2002; Roderick et al., 2000; Safai, 2003; 2004; Walk, 1997; 2004). These studies provide valuable insights into the relationships between athletes and medical care providers, which appear to play a central role in medics' ability to negotiate different options for treatment. However, with the exception of Pike (2005), little attention has been given to competitive sports that have limited access to medical professionals.

Considering this, and the apparent transient nature of medical relationships in combat sports, it seems fitting to study this form of lay sports medicine within such settings. In the next section, I describe the potential utility of aligning ideas about 'thought collectives' and sportsnets as a means of framing the production of lay knowledge, before I turn to empirically defining, exploring and contextualising the process of team-doctoring.

4.3 Sportsnets as Thought Collectives

Nixon's (1992) notion 'sportsnets' clearly resonate with key elements of Fleck's ([1935] 1979) ideas on 'thought collectives'. In this regard, Nixon (1992, p.130) identified athletes as "receivers rather than sources" of information within their sportsnet, which aligns with Fleck's unidirectional circulation of knowledge within a thought collective. Also, Nixon (1992, p.133) stated that "contacts in dense networks with a homogenous culture tend to be mutually reinforcing". That is to say, when athletes are deeply embedded in such sportsnets, various members of that group are likely to reaffirm similar normative ideas, which means that they are less likely to voluntarily seek information from alternative sources. This reinforcement and circulation of norms and values can be explained by a shared 'thought

style'. Within these 'dense' thought collectives, members are less likely to adopt more than one thought style; as such, it is expected that cultural messages around accepting risk and unhealthy practices go largely unchallenged.

4.4 Coach-Led Team-Doctoring

Waddington (2012) suggests that athletes' efforts to deal with risk, pain and injury are likely to reflect beliefs held by prominent members of their sportsnet. With coaches usually dominating the power relation in such social spaces, they were often the ones that set the standard of 'normative' overconformity within their team (Coker-Cranney, 2018; Hughes and Coakley, 1991). This was mostly evident in gym observations, where coaches frequently communicated their expectations of what their fighters must do to remain in the sport. Take Faisal's speech to his fighters after what appeared to be an unforgiving sparring session:

> Stop feeling sorry for yourself. We are all injured. It is how it is. You're not fuckin' Gavin or Sally trotting on a horse for a dressage rehearsal on a Sunday morning are you? We're fuckin' fighters. See the difference? If you're 100% when you fight then you're doing it wrong. When I'm injured I take it as an opportunity to work on other things. There is always a way round it. No one is gonna feel sorry for ya on fight night. [Fieldnotes, Winter 2020]

This is one way that coaches were able to shape the 'thought style' of their team. Most of the fighters in this study tended to accept these health-compromising norms. As such, it appeared that they mainly understood how to manage the injuries that seemingly followed these practices by turning to their coaches for advice, support and even 'medical' knowledge.

Within these sportsnets the coaches were usually on hand and easily approached by the athletes – in Nixon's (1992) language, 'reachable'. The fighters found the coach's experiences of pain and injury relatable and tended to trust their advice over that of medical professionals. This appeared to be connected to the time they spend training together. Jayson's thoughts about his coaches captures this really well:

100%, 100% I trust my coaches more. They train with me every day. They watch me. And they've been in the sport. They've done it themselves. I go to a doctor, obviously, they know what they're talking about when it comes to the human body but never met them before. They've never seen me train, they've never seen me fight. They don't know who I am or anything.

This kind of relatively unrestrictive access to a 'lay expert' (Prior, 2003) stood in sharp contrast to the fighters' lack of access to formally qualified medical experts.

It appears, then, that the coaches' previous experiences were an important qualification that occupied them a central position within team-doctoring. In this regard, the majority of fighters interviewed in this study considered their coaches to be experts in the sport:

Hamid: Well, in a training camp or in any gym you realise that the coach is the backbone. He knows the ins and outs. He's been there, he's done that. He's seen things happen. He knows the best. All over, he's the top guy.

Daisy[11]: So, he's my coach, so within that dynamic, within the gym and that relationship that you have with someone who's – he's the head honcho, he knows. He's been there, done it.

These statements neatly align with Fleck's ([1935] 1979) notions about 'special experts' being classed as main sources of knowledge within a thought collective. In this way, despite coaches not being medical experts in any formal sense, they played a pivotal role in team-doctoring, as fighters tended to rely on them as their first point of reference for obtaining information about injuries and sport-related health issues.

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[11] Professional Muay Thai fighter in her 20s. has been fighting for over five years and holds several titles.

Given that the coaches invariably had more experiential knowledge in the sport, their fighters assumed that they were familiar with common injuries. And when I pointedly questioned their 'medical expertise', fighters were often quick to defend them:

> **Reem:** Why do you think he [coach] knows all those stuff about the body?
>
> **Elijah[12]:** Probably because he's probably experienced most of it being a fighter. I don't know, but he was obviously a coach for loads of years as well. He's probably seen it all.
>
> **Reem:** Even if he's not a medical person?
>
> **Elijah:** Yes, even if he's not a medical person. He's still got the knowledge of everything. He may not be qualified in it, but I think he's still got the knowledge.

> **Reem:** Is he [coach] a medical person?
>
> **Khalid[13]:** I mean how do you define who's a medical person? [laughs] I think he is in what he does at least. He was a professional Thai boxer when he used to compete, he was a world champion facing up toughest people on the planet. And so, I think he does know the, you know, the body pretty well, how it reacts in a fighting situation.

These statements illustrate that the fighters accepted their coaches' lay expertise in sports medicine by associating it with their embodied experiences as current and former fighters.

Some fighters even attached medical terms to their injuries based on their coaches' 'lay diagnosis'. The following two examples are useful:

[after telling me that her coach 'diagnosed' her with 'fluid retention']

> **Reem:** Was that fluid retention diagnosed?
>
> **Alice[14]:** My coach told me so. But I trust him.

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[12] Amateur kickboxer in his 20s. Has been fighting for almost 2 years and regularly participates in white-collar boxing.

[13] Amateur Muay Thai fighter in his 20s. picked up the sport at university over 4 years ago and competes regularly.

[14] A health care worker and Amateur Muay Thai fighter in her mid 20s. Taking a break from competing to focus on her postgraduate studies.

Reem: Why do you trust him?

Alice: Mainly from his own fighting experience, years of professional fighting, and years of coaching professional fighters. It's something he's come across very often and he explained why it might happen to me and it's more common in people with higher levels of oestrogen. So that fit me. [laughs]

Reem: Does he have a medical background?

Alice: No, he doesn't. So, I guess I wouldn't say it was a medical diagnosis, it was just I didn't feel like I needed a medical opinion on it, because it wasn't influencing any other part of my life, just my training. Also, my dad's a doctor so sometimes I'd ask him things, but not all the time cause sometimes, he just – he goes over the top.

Tim[15]: He [coach] had a feel of my foot. He told me what he thought it might be and he accommodated for me in training so instead of skipping, I'd shadowbox, because obviously the impact.

Reem: What did he tell you? What did he think it was?

Tim: Yes, he thought it was tendonitis I think or – yes, tendonitis that's it. I've done my research from Google. It's just an injury you get from – It's a recurring injury, which you get from doing repetition stuff.

Reem: Did you go to the doctor to check if it was in fact tendonitis?

Tim: No, cause I don't think I needed to cause what [coach] said made sense to me. Like [pause] I don't think confirming if it's in fact tendonitis is gonna make any difference you know? It might help me understand what's going on a little bit better so I think…like if there was a real problem then he'll probably tell me to go to the doctor you know? Like I trust him enough to know that he won't let me train with an injury if it was a serious one.

Often, the fighters did not feel like they needed to get 'official diagnoses' or seek further medical help for their conditions because their coaches lay explanations 'made sense' to

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[15] A university student and professional Muay Thai fighter in his 20s. Have been training and competing in the sport since he was 6 years old and holds several titles.

them. Which can help explain their rejection of 'outsider' (medical) knowledge, which I will turn to in the next section.

Alongside the above thoughts from fighters, the coaches acknowledged that their experiential knowledge in both fighting and coaching had helped them recognise and manage certain injuries sustained by their fighters. This was particularly evident in conversations about concussion:

> **Farhan[16]:** I think because I've had that experience, I feel like I've dealt with it [concussion] better because even if they [fighters] haven't even told me, I've noticed it, I've seen their eyes, I've seen them dazed.

> **Ted[17]:** Concussions, you know . . . it's a very untapped subject. I know how to pick it, one of my fighters has got it.

Taken together, these examples indicate the important place that the coaches' long-term engagement in the sport play in the development of lay knowledge around risk, injuries and (ill) health, which also served as a key element of the socialisation of athletes into these sportsnets. This process of 'medical' lay knowledge exchanging and developing across generations of fighters and coaches aligns neatly with Fleck's ([1935] 1979) conceptual analysis of the circulation and maintenance of thought styles within 'dense' thought collectives. Similarly, Freidson (1960, p.377) argued that "the extensiveness of the lay referral structure has relevance to the channelling and reinforcement of lay culture". In this context, this means that fighters that belong to such collectives are more likely to value, reaffirm and circulate these lay understandings of health rather than question the 'thought style' of their team.

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[16] Retired boxer and coach who holds several international and world titles.
[17] Muay Thai coach and referee, has been running his own gym for over 20 years.

4.5 The Rejection of 'Outsider' Medical Knowledge

The choice to seek medical advice from coaches was largely a function of ease of access in combination with an assumption that the coach would have context-specific advice due to their personal experiences in sport. As such, the fighters hardly had any contact with their primary healthcare providers and rarely spoke about them; when they did, these doctors were often classed as outsiders due to their lack of apparent 'fight' knowledge and experience:

> **Nathan:** They [doctors] don't let you work around something you truly know that you can work around. I think the problem is that they won't even let you try work around it. So, I think most people don't wanna go to a doctor because they kind of already had this preconceived notion that the doctor is just gonna tell them to stop doing what they love. And obviously they're not gonna stop doing what they love, so they stop going to the doctor.

> **Lorenzo[18]:** Doctors always want you to stop, it make their job easy. I actually think some doctors are pretty lazy. All they say is put ice and rest. I don't need to rest. I need to go fight so fix me [laughs]. Do you know what I mean? Give me a solution, give me something.

Similarly, the fighters seldom spoke about ringside medical personnel and often had some difficulty recalling the interactions they had with them. This is because such medical professionals play a transitory role within combat sport communities, usually under conditions whereby fighters consider them as a potential blockage to their ability to compete at fight events (Channon, Matthews and Hillier, 2020a; 2020b; 2021).

Considering this, some participants spoke about hiding injuries from ringside medical personnel during pre-fight medical evaluations:

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[18] Professional MMA fighter and BJJ coach in his 30s.

Reem: Have you ever fought while injured?

Hamid: No, like that's silly. They do medical checks anyway before the fight to rule out anything obvious like broken ribs and blood pressure and your eyes.

Reem: Okay, what about the not so obvious stuff?

Hamid: Erm, [sighs then smiles] I mean, you're never a 100% healthy when you fight, you know that, like you're obviously sore from fight camp and that, you know. Um [pause] you might be a little light headed from all the anxiousness and the anticipation. No one wants to go through a full 8 week or 12 week, even 6 week fight camp[19] just to be told by the medicals not to do the fight. I think you know what I'm trying to say here.

Elliot[20]: I remember this one time, I had this like persistent sharp pain in my ribs. So in the medicals when he [medic] got to checking my ribs I did this involuntarily noise, like a weird awkward squeal and I thought "oh fuck". He looked at me like "you okay there champ?" and I like quickly go "Yeah I'm alright, it's your hands. they're cold bro like you took me by surprise that's it" [laughs].

Reem: So, could he tell that something was wrong with your ribs?

Elliot: No I managed to blag myself out of that one thankfully [laughs] I know I shouldn't lie to a medic because a medic has your best interest at heart like, with your health, but at the same time like if you wanna go in there and fight like, you know [laughs] you've got to do what you've got to do.

Collectively, these examples show that the 'preconceived notion', described by Nathan, was a commonly occurring element of the thought style that the fighters developed from their interactions with their sportsnet. In this regard, fighters almost always associated 'doctors' with treatment options that prevented them from fighting, which is why they tended to avoid them. In turn, fighters favoured team-doctoring because they knew that the knowledge they would gain was more likely to enable them to 'work around' their injuries and continue to compete.

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[19] Typically, a 6-8 week period of organised combat sport training and sparring leading up to a competition.
[20] Amateur MMA fighter and kickboxer in his 20s. Has been competing for over 7 years and is currently preparing for his first professional MMA fight.

Interestingly, there were exceptions that in some ways 'proved' this rule of fighters valuing lay knowledge. On some occasions, fighters would seek advice from fellow gym members who held relevant medical qualifications. Meghan, a retired fighter and qualified therapist, provided a good example of this:

> **Reem:** Did people at the gym ask you for general medical advice or like how to deal with certain injuries because you're a therapist?
>
> **Meghan[21]:** All the time! [laughs] Yeah, yeah, all the time. Ever since when I was first training to be a therapist.

Meghan later explained that this was one of the reasons why most of her patients happen to be fighters: "I think, partially because I was a fighter, I mean, I know one of the reasons that people come to see me is because they trust that I would understand what they need to be able to do".

While it was relatively rare for members of martial arts clubs to have medical qualifications, on occasion this was the case. Due to their connection to these sports, these formal medical personnel, or in Fleck's ([1935] 1979) terms 'general experts', were not seen as outsiders and their knowledge was often welcomed by fighters and coaches:

> **Kate[22]:** And also we have few doctors here in the gym, thankfully. So I usually consult with them and what would be the best course of action. So, they tell me I should see a specialist, or get a scan done then I do that.

> **Faisal:** We've got a doctor who trains in our gym sometimes, I sometimes speak to him. There're times we've had injuries while training like in sparring if there's an injury and if the doctor is in the room he actually puts on what we call 'medical masterclass' [laughs] and everybody gathers round while he explains the injury.

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[21] Retired professional fighter who works as a therapist. Specific sport and occupation not mentioned to maintain further anonymity.
[22] BJJ black belt and coach in her 30s.

Such members not only shared medical advice but also offered their services when appropriate, both of which coaches and fighters seemed to take on board because, unlike primary healthcare providers and ringside medical personnel, they were considered as 'fighters' who were part of the team. And with this, members assumed that they were more likely to understand and comply with the team's thought style in relation to largely valuing athletic performance over health.

These medically trained fighters also belong to occupational 'thought collectives' with thought styles' that prioritise health over ailment. In this case, returning to Fleck's ([1935] 1979) interpretations of 'esoteric' and 'exoteric' circles in the circulation of knowledge, these medics are the mediators of esoteric thoughts and information. On the other hand, within their 'fight' collective, they are seen as exoteric members, as such, they become *receivers* rather than *sources* of esoteric information, and the power dynamic here is shifted to prominent members of the sportsnet. However, some seem to adjust their 'expert' medical knowledge to align with the thought style of their team that largely favours performance. As such, it is only under certain circumstances, that acted to reconfirm the largely accepted way of engaging in the sports, that their medical expertise is welcomed and accepted.

4.6 Managing the Coach's Expectations: Athlete Self-Diagnosis

Before seeking team-doctoring, some fighters spoke about conducting a self-diagnosis of sorts in order to classify injuries as 'serious' or 'playable':

> **Reem:** Did you tell the coach that you got dazed when he [sparring partner] caught you with that uppercut?
> **Anthony[23]:** [scoffs] No, why would I?
> **Reem:** Cause you just said that you tell him everything –

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[23] Amateur boxer in his late 20s. Has been training for over 8 years but only started competing in the past 2 years.

Anthony: I do, but [long pause], it depends really . . . So maybe not everything, cause it depends how serious it is cause you know getting into it that you're bound to get hurt. It's just how much your body can take on, you know? Like I can tell him if I want but I personally don't. But I definitely tell him when something is getting serious, definitely.

Jayson: It's not that I hide, but I feel that it's not necessary for him [coach] to know because . . .it's because it's part of the sport . . . you don't have to tell him everything but, you know, if it's a legitimate injury that will have an impact on your training of course you have to let him know so we can work around that.

This shows that athletes seem to evaluate the severity of their injuries or (ill) health based on how it would affect their performance. Similarly, Prior (2003) argued that personal motivations and experiences largely shape individuals' lay understanding of illness and disease. As such, most fighters were generally inclined to share more 'serious' injuries and hide 'playable' ones before turning for 'medical' advice from their coaches.

In line with this, and similar to Kotarba's (1983) athletic trainers, some fighters revealed that they chose to hide certain injuries from their coaches, because they did not want to be stigmatised as 'nongamers':

Bill[24]: Well I see him [coach] bollockin' other guys at the gym sometimes and I think 'I don't want to be that guy'.

Tyler[25]: Even when I feel like death I go [to the gym], I always go.
Reem: So what will happen if you don't go?
Tyler: Dunno, but like my coach says showing up is half the battle and if you good enough to show up then you good enough to train, so yeah.

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[24] Amateur kickboxer in his 20s. held several area titles as a junior. Took up Muay Thai over a year ago and has since had two amateur fights.
[25] English teacher inn his 20s. had 3 amateur Muay Thai fights. Stopped training after breaking his femur in his last fight.

Reem: Even when you 'feel like death' –

[both laughing]

Tyler: Not like 'death, death' but you know how coaches can be like.

Reem: Yeah, but can you give me an example?

Tyler: So you know how sometimes the coach takes a mick outta people who whinge a lot? So you sort of push through when you can cause otherwise you'll be known as the gym's 'sick note' and no one wants that.

These examples show that, in some situations, the athletes deliberately chose to not share their experiences with pain and injury. This was done in an attempt to manage their coaches' expectations about them.

In a similar way, there was also a general consensus amongst fighters that their coaches might think that they were unfit to fight if they kept on returning to them for advice about recurrent injuries:

Bill: Like if I complain about something a lot he might think that I'm not good enough to fight or I am not taking it serious.

Elijah: You don't want to seem [pause] weak is the wrong word, but you don't want to seem like you're trying to get out of doing the work just because your leg hurts a little bit, but you can get through it. He'd think I'm not cut to fight if I come to him for every little thing.

The fighters tried to assess when to seek team-doctoring from their coaches, not only because they did not want to be perceived as malingerers, but more importantly because they assumed that this process might potentially prevent them from competing.

While none of the participants in this study were prohibited from fighting because of 'too much' team-doctoring, such messages were clearly implied by their coaches during training sessions. This example from my observations is particularly illustrative:

We were sat on the mats chatting as we wrapped our hands getting ready for sparring. The coach came and showed us a text message on his phone and said "look at that… what a load of bollocks". It was from Oscar, it was the third time that he texted this week saying that he cannot come to training because of his shins. Nodding in disapproval, the coach then walked back to the ring and said "seeya Monday he says [scoffs] let's see how his shins feel come Monday when I tell him that I've pulled him out". [Fieldnotes, Autumn 2019]

Collectively, these examples show that the athletes' motives behind seeking team-doctoring are not only influenced by their trusting interpersonal relationships with their coaches, but are also dependent on normative ways that their team thought about risk, pain and injury. This 'thought style' was developed over time and shared through chats, texts, and ways of behaving during and after training sessions.

4.7 Athlete-To-Athlete Team-Doctoring

The athletes formed 'alliances' (Nixon, 1992) amongst themselves, similar to Kotarba's (1983) athletic subcultures, where they often hid their injuries and ailments from prominent members. These athlete-exclusive alliances provided fighters with a space to speak about their injuries and potential health issues that they otherwise cannot speak about in front of their coaches. Such exchanges often happened before or after training sessions, typically in situations and/or spaces where athletes can speak more freely in the absence of the coach. Take the conversation between Dan[26] and Patrick as an example:

[On a train ride back home after an organised sparring session at another gym]
Patrick: Urgh, I've had it like…my shins are quite banged up now look. [props up his right leg on the shared table to reveal a collection of rather painful looking bruises] … I really think it's time to give it a break like... I'm thinking of – like maybe telling [coach]

[26] An engineer and professional Muay Thai fighter in his 20s. Have been training and competing since he was 10 years old and hold several titles. Works at a local café because he prefers a 'low maintenance' job so that he can focus on his fighting career.

that I wanna lay off 'leg sparring' and focus on boxing you know, for a few days … like so to give it a chance to heal but dunno –

Dan: What? come, come again mate – you hearing this Reem? [laughing]

Reem: Ha! No chance, good luck with that! [all laughing]

Dan: Nonsense!

Patrick: I know, I know. Dunno where I was going with that –

Dan: …Mate, you know you can't really dictate your training. Moan all you want to us. That's fine. But you can't do that in front of [coach] even when he says "oh I need to know what's going on all the time", you know that you can't really tell him everything.

Patrick: Yeah of course, I know, but I was just saying –

Dan: Listen, let me stop you here for a just a second. I know it hurts. It's like… walking around with really tight ankle weights innit? …But just ice it mate– like really ice, ice, ice the crap out of it. That's all you can do at this stage really. But don't get me wrong, you can always moan to us. Like literally have at it, gnaw our ears out if you want. But trust me you don't want to initiate a decision like that. Like on your own accord. I'm just trying to be honest with you here…

This type of athlete-to-athlete team doctoring was often sought in order to assess and manage their experiences with pain and injury in 'confidence' (Kotarba, 1983). This is because the fighters knew that in certain situations, seeking 'medical' support and advice for their (ill)health, particularly from their coaches, was understood and communicated as something akin to an 'unchoosable choice'. In other words, the athletes believed that such choices, if taken, would more than likely result in them not being about to train and compete – something that they preferred not to risk. Further examples of 'unchoosable choices' will be discussed in Chapters Five.

Some fighters also expressed that they were more likely to seek team-doctoring from other athletes in situations where they thought that their coach's advice did not fit their needs. This was apparent in conversations about weight cutting. For example, Chen chose to follow diets recommended by her other women in gym despite the multiple health implications she had suffered by following their advice:

> **Reem:** Why do you go to the girls then? Does he [coach] not help you with your weight cut?
>
> **Chen[27]:** He does, but it's very basic. But my body is different than the young men [at the gym], what works on them doesn't work on me. I'm a 44-year-old woman, you see? It's not the same.

Most of the women in this study have expressed similar explanations when speaking about their coach's advice in relation to weight cutting.

Similarly, Jamie preferred to seek advice from a more experienced teammate because he thought that his coach's weight-cutting methods were 'dated':

> **Jamie[28]:** Like, [teammate], he's a Bellator [popular MMA promotion] fighter now, so it's like the biggest show in Europe right now. He's got experience though I can trust him. Plus, my coach, he's a bit older. So when he was fighting the training methods and the weight cutting methods were a bit different, a bit older and could be a bit dated. Now [teammate] he's up to date with everything. So I know he's taking it 100% serious and I can trust him and his methods are most likely gonna be best for me as well cause he's similar in height and stature and frame.

This aligns neatly with Prior's (2003) examination of the limitations of lay experts in dealing with matters of health and illness by revealing how their 'expertness' will always remain heavily subjective to their own experiences. In a similar way, team-doctoring is heavily dependent on the coaches' lay experiences of pain and injury, and, when those experiences are no longer compatible, athletes choose to seek alternative sources. However, because this exchange of 'medical' lay knowledge is still within the same collective, their advice remains heavily influenced by the thought style of the team.

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[27] Part-time university lecturer and amateur Muay Thai fighter. Practiced the sport recreationally for 10 years and only started competing 3 years ago.

[28] Professional Muay Thai fighter in his 20s. Currently taking a break from fighting to recover from his injuries.

4.8 Conclusion

The purpose of this chapter is not to evidence the fighters' normative overconformity to health-compromising norms that dominate most competitive sports settings, but rather to describe the process of how they come to accept, rationalise and manage those ideas and their physical outcomes. The preceding sections have empirically fleshed out key elements of team doctoring. Given this analysis I define the process of team-doctoring as one that frames how knowledge and practice of lay sport medicine is circulated, (mis)understood and normalised by athletes in somewhat isolated team settings.

When Safai (2003) first introduced team-doctoring, she suggested that being involved in such a process might affect athletes' expectations about pain tolerance and consequently their judgements about when to seek medical help. Indeed, the ease of accessing knowledge from 'lay experts' played a key role in shaping the athletes' medical (lay) knowledge about how to deal with risk, pain and injury. This contributed to the development of normative ideas about risk and (ill) health in the form of a shared 'thought style'. As such, the trusting interpersonal relationships between members within 'fight' collectives are fundamental to how team-doctoring is structured.

Fighters sought out team-doctoring because it was geared towards maintaining and improving their athletic performance rather than general health-related outcomes. In connection to this, in situations where fighters seem to require formal medical interventions they were largely disregarded and ignored. Similarly, in her work on female rowers, Pike (2005, p.213) argues that this "communal sense of treatment seemed to be particularly relevant to athletes, for whom activity is central to their self-identity". As such, this "culture of shared decision making" was largely due to the lack of dedicated medical support along with the athletes' perceived incompetence of 'orthodox medical care' in dealing with their sport-related health issues (Pike, 2005, p.213).

This perceived incompetence appears to "emerge from a process of interpersonal influence…organized by the culture and structure of the community or neighbourhood through which "outside" knowledge and evaluation is strained" (Freidson, 1960, p.376). Yet,

I have evidenced that such interpersonal relationships and considerations of cultural values can also strain the fighters' decision-making process, where seeking medical help (in certain situations) can come across as an 'unchoosable' choice. Indeed, as Freidson (1960, p.379) noted of 'clients' (as patients), the farther they are involved within a 'lay referral system' the "fewer choices can [they] make and the less can [they] control what is done to [them]".

Furthermore, these preceding points can help explain why most of the athletes I spoke with gained medical knowledge from people without formal medical expertise. This is because in such contexts, team-doctoring neatly and efficiently filled in for such qualified advice. Which, in turn, reaffirms the health compromising norms that dominate risky body cultures. This can be problematic, since the basis of medical knowledge from 'lay experts' has been shown to be invariably idiosyncratic (Prior, 2003) and clearly open to error and inconstancy, and shaped by cultural ideas not informed by the Hippocratic Oath. This was evident in examples linked to the limitations of the coach's experiential knowledge where fighters formed networks with one another to try and 'work around' their individual issues. In the following chapter, I focus further attention on some of the limits of team-doctoring outlined above by exploring fighters' understanding of concussion.

Chapter Five – The Limitations of Team-Doctoring: Fighters' Understanding of Concussion

5.0 Introduction

This chapter begins by situating the 'concussion discussion' within combat sport spaces. This is followed by a brief description of the 'uncertainties' faced by sport medicine professionals surrounding their diagnosis and management of concussion. The purpose of this was to highlight the lingering ambiguity of the condition and its persistence within medical discourse. Subsequently, this helped frame the utilisation of Atkinson 's (1984) notions of 'uncertainty' and 'certainty' when considering the participants' understanding of concussion. Leading on from this, the 'practical' ways in which the participants' gained their knowledge about head injuries were further examined by drawing on Schutz's (1970) phenomenology of expertise in the social construction and distribution of knowledge. Within this, an additional ideal type, the 'expert on the street', was proposed in order to further understand the coaches' role in shaping athletes understanding and management of concussion through the process of team-doctoring. Here the notion of 'lay medical certainty' was discussed. Following this, the participants understanding long-term consequences of brain injuries were considered before concluding the chapter.

5.1 Head injuries in Combat Sports

When talking with me about their different experiences with risk, pain and injury, it became apparent that the participants' stories of head injuries, concomitant with their perceived knowledge about concussion, were a recurring topic of discussion. Such conversations often led to a situation where most of the fighters told me in quite certain terms that they have never had a concussion, while also being able to describe symptoms that might have led to a diagnosis of one. Take Nathan's description of not being concussed, while getting "caught by a stray knee" to the head:

> **Nathan:** I remember I instantly saw stars and thought to myself "fuck am I dazed?". I didn't know where I was for a split second and I heard like a weird metallic, high dub-

step sound from Transformers [both laughing]. Maybe that's what it sounds like when people say they hear bells or something. It was some really weird Transformery [akin to a 'phasing' sound effect] like metal grinding on metal sound. That's the best way to put it, it's real weird.

Reem: Do you think you were concussed?

Nathan: No, I don't think so. Cause I've had that before as well that same feeling, where I've almost passed out … your head just sort of feels a bit spaced out and sometimes you get this annoying lingering headache for a bit but then it all goes away. So, to answer your question, I don't know what it is, but It can't be good. You're basically depriving your brain of oxygen, it can't be good.

Of course, without a medical diagnosis it is impossible to know whether or not Nathan was concussed, but this example illustrates something of the initial confidence that fighters displayed in relation to their knowledge and ability manage and overcome such experiences.

Like Nathan, most of the fighters in this study did not seem to associate these symptoms with concussion or any other medical term linked to brain injury (such as chronic traumatic encephalopathy (CTE) or secondary impact syndrome, which have recently found their way into some popular discourses around concussion in sport, see Ventresca, 2019 and Lupkin, 2012). Of course, fighters are not expected to have refined definitions of concussion; especially when the medical community is still working towards this (Malcolm, 2009). And if the medical community is reaching out for lay understandings to gain 'medical certainty' (Malcolm, 2019) about concussion, what does the construction of lay knowledge about concussion look like in sporting spaces where team-doctoring is apparent? In what follows, I begin to empirically describe combat sport athletes' understanding of concussion.

5.2 Fighters' Understanding of Concussion: Transient Certainty

As a starting point during interviews, I sought to establish how the participants thought about concussions in a broad sense. All of them understood that concussions were linked to some degree of head trauma. While there appears at first to be a level of certainty here, there was

a *transience to this clarity*. Atkinson (1984) argues that the idea of 'uncertainty' in medical sociology is over-emphasised and should be considered in relation to notions of 'certainty' when examining the ways that medical discourses are played out during social interactions. Taking this argument forward, I attempt to adopt a similar approach when considering the participants' understanding of concussion.

Over varying time periods, sometimes during a single answer to a question and/or during the course of an interview, the participants began expressing various levels of uncertainty. These examples are illustrative of such responses:

> **Abbie[29]:** A concussion is when you got a blow to the head and it's like when the brain hits the skull or something and then it like gets a swelling that's on the outside or the inside of – [pause] I don't know exactly, I don't know so much of what a concussion is. I know more of the symptoms of what a concussion is.

> **Alexis[30]:** Isn't it when your brain like rattles around too much in the noggin' after you get pinged and you get some damage? Is that it? I think it's something like that. Um, I don't know – I don't know, it's just bad. Let's leave it at that [laughs].

> **Frankie[31]:** It's when your brain shakes in your skull and you get memory loss and really bad headaches. I've had that happen to me and I know that's happened to people and obviously that's concussion.
> [7 minutes later in the same interview]
> **Frankie:**… to be honest, I don't have a clue what's concussion. I don't know if it's just a brain injury or a serious uh – I haven't got a clue. I'm no doctor [laughs] I'm a fighter.

This shift from certainty to uncertainty displayed by the participants revealed their often assumed and loose understandings of concussion. They became uncertain once they started

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[29] BJJ blue belt in her 20s. Picked up the sport in university 3 years ago and competes regularly.
[30] A freelance writer and professional Muay Thai fighter in her 20s.
[31] Professional Muay Thai fighter and coach in his late 30s. Retired from the sport 5 years ago shortly after the birth of his first child.

to think about the gaps and inconsistencies in knowledge that lie beneath their initial assertions of certainty.

As these conversations progressed beyond the simplistic question of whether they knew what a concussion was (or was not) some fighters started to recognise that concussions, within their sportsnet, were not explicitly addressed in the way that other 'run of the mill' or 'mechanical' injuries might be:

> **Hannah**[32]:… You know what, it [concussion] is not something that people talk about very much. It's something that comes up a lot when people talk about in the context of maybe like really old fighters who maybe have taken too many hits or something … It's interesting that you put it like that … I didn't really think about it. Well, yeah, it's not something we talk about directly, like head injury. Like a lot of emphasis is put on protecting your head, but the word concussion was – it hardly comes up.

> [After telling me that she was diagnosed with concussion after one of her fights]
> **Reem:** Did your coach take this into consideration after you got back into training?
> **Meghan:** Uh, I just [long pause] …I mean I don't…I'm not sure we talked about it very much…I mean, I don't think about it cause, uh [pause] I think it tends to be taken as something that…just one of those things that happens…Yeah.

It seems then, that the direct and long-term health implications of head injuries was sometimes left unspoken within gyms and this added to the lack of understanding about what a concussion was. These examples highlight a limitation of team-doctoring, as the fighters knew that speaking or seeking advice about certain topics was not part of their team's 'thought style'. In this context, talking about the implications of head injuries was something that was largely off limits. This can partially help explain why the fighters, as demonstrated by Nathan and Meghan, often undermined and overlooked speaking and thinking about the side effects that arise from getting hit to the head.

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[32] Professional Muay Thai fighter in her early 30s. holds several international titles.

Furthermore, when the participants did describe mechanisms of head injury, such discussions were largely devoid of reference to medical conditions and assessments. James'[33] description of his 'mentality' and 'thought process' during sparring goes some way to explaining a part of this process:

> **James:** In sparring I'm in the mentality of I'm practicing the fight. So I'm avoiding it all costs to have any kind of hiccup in my mentality in the sense if I get hit or rocked, my mentality needs to be 'I've got to get that point back' or I need to make sure my hands are up. I'm not thinking about, 'Oh, he's hitting me too hard in the head' or whatever, you know? [laughs] So it's not the first thing that comes to my mind aye, when you get caught by a punch what do you do? You automatically bring your guard back up amirite?
>
> **Reem:** Or collapse on the ground [both laughing].
>
> **James:** Yeah that could happen aye [laughs] but my thought process is not to think about it. So, if I get hit, I react to it and forget about it.

The key term here is 'rocked' – fighters will use this, and similar terms, to mean being unsteady on their feet, and perhaps unable to get their bearings, after taking a blow to the head, which passes reasonably quickly, perhaps within seconds. James' focus is not on health, well-being or medical interpretations of this potential symptom of a brain injury, instead, his intention is to maintain his sporting performance.

Collectively, these examples show that fighters consider acute brain injuries by drawing on ideas connected to the performance ideologies which dominate the majority of sporting spaces (Hughes and Coakley, 1991; Nixon, 1992). And because these ideas are gained, reaffirmed, and circulated through the process of team-doctoring, it should not be surprising that the participants did not also reach for medical definitions. In other words, medical interpretations, definitions and management strategies were not central to the participants thinking. As such, they seldom found themselves managing the 'medical uncertainties' discussed earlier (Malcolm, 2009). Instead, they had a simple and clear set of performance

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[33] Professional Muay Thai fighter and coach in his 30s. currently taking a break to recover from a knee surgery.

focused measures that were designed to ensure they could continue competing while compromised by symptoms that might more readily be recognised as concussion.

5.3 Lay Medical Certainty and Schutz's Phenomenology of Expertise

While team-doctoring is not limited to coaches, most of the participants preferred approaching them. The following statements are illustrative:

> **Ryan:** I'd only go to them [other fighters] if they're like really, really experienced and been around for as long as my coach like, do you know what I mean? But in general, I'll just go chat to my coach.

> **Jordan[34]:** There's loads of world class fighters in my gym like, yous probably know [of] all them as well. Like combined they got maybe 30-40 years of experience under their belt. You know where I'm going with this yeah? So I could essentially go to them anytime, but I don't have to really cause [coach] is there. Like there's a reason why he's coach in the first place.

As discussed in the previous chapter, these statements were supported by the coaches' central position within the gym and their experiential expertise from their own participation in sport and often from years of 'managing' their athlete's health issues. This explains why coaches were often the *de facto* experts that the participants sought help from when they experienced health issues related to their participation in the sport. A useful way of thinking about such advice is that it offered *lay medical certainty*. As such, this type of certainty is based on lay medical knowledge acquired from individuals who are viewed as experiential experts within their chosen field.

To further explain this process, I will draw on Schutz's (1970) notions of the social construction of expertise as means of framing combat sport athletes' understandings of concussion. This

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[34] Professional Muay Thai fighter in his 20s. Works as an engineer in a private company.

will then help explain the ways in which athletes understand and manage their experiences of with head injury through team-doctoring.

Schutz (1970) proposes that the social construction of knowledge is built on three ideal types: the expert, the man on the street and the well-informed citizen. Schutz's work is 'of its time' in his exclusive use of male pronouns, I will try to unpick this where possible. The expert can be considered as knowledgeable in a system of 'relevances' imposed by pre-established problems within their chosen field. Therefore, such knowledge "is restricted to a limited field but therein it is clear and distinct" (Schutz 1970, p.239). The man on the street possesses "a knowledge of recipes indicating how to bring forth in typical situations typical results by typical means. The recipes indicate procedures which can be trusted even though they are not clearly understood" (Schutz, 1970, p.240). Knowledge possessed in this way may be vague but "is still sufficiently precise for the practical purpose at hand" (ibid.). Between these two somewhat oppositional ideal types sits the well-informed citizen, who does not aim at possessing expert knowledge, but does not rely on 'recipe' knowledge alone.

5.4 The 'Expert' on The Street

In order to understand the role of coaches in the construction and circulation of lay knowledge amongst their athletes; I propose an additional ideal type is added to Schutz's work which sits between 'the expert' and the 'man on the street': *the 'expert' on the street*. Reworking Schutz (1970), such a person can be understood as being skilled at employing experiential 'recipes' that are learned from their long-term engagement in their chosen field. In other words, they are considered as 'lay' experts by the virtue of having personal experiences that are otherwise not commonly possessed and/or accepted by conventional experts.

Indeed, Schutz (1970, p.241-242, my addition in brackets) argues that 'the expert' "will never accept a layman or dilettante as a competent judge of [their] performances" because the premise of their expertise "starts from the assumption not only that the system of problems established within [their] field is relevant but that it is the only relevant system". While the

personal experiences of the 'expert' on the street do not necessarily fit within 'the expert's' system of professional "intrinsic relevances" (Schutz 1970, p.242), they still play a central role in the social construction of lay knowledge. This is evident in earlier examples where the athletes tend to believe that some of their experiences with sport-related pain and injury are more likely to be dismissed and/or misunderstood by medical care providers. Furthermore, unlike Schutz's (1970, p.240) well-informed citizen, the 'expert' on the street does not aim for "reasonably founded opinions" but rather possesses the certainty that nothing more needs to be known in order to justify their pragmatic beliefs. Taken together then, and considering the preceding discussion, introducing this ideal type can help explain how coaches are seen as 'experts' on the street that provide their fighters with lay medical certainty through the process of team-doctoring.

Most of the opportunities to study how the coaches operated as sources of 'concussion' knowledge came when the participants discussed sparring sessions. The following examples are illustrative:

> [after describing how he was dazed after getting caught by an elbow to the head]
> **Reem:** Did you tell [coach] that you felt dazed?
> **Saif[35]:** Yeah. He gave me an ice pack to put on my black eye and told me to lay on the floor and rest a couple of rounds. Then I told him 'oh [coach] I can't continue, I think I'm dazed' so he said to rest it out for a few days and go to the doctor. He said 99% you'll be fine but just to stay safe.

> [After describing how he got "knocked down" by a head kick]
> **David[36]:** I freaked out at first cus I've, like obviously I never like felt that feeling before. Like yeah I've got rocked a couple of times before but this one took the wind out of me sails. I just could not shake myself out of it. Something was off with me that night cus I've been in worst situations and I was able to carry on just fine.

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[35] Amateur Muay Thai fighter in his 20s. picked up the sport in university 4 years ago. Works part-time as a receptionist in a local hotel.
[36] A professional Muay Thai fighter and kickboxer in his early 20s. Competes regularly and holds prestigious titles. Works as a part-time security guard.

Reem: What happened after? Did you continue [sparring]?

David: No, Frankie [coach] said no. I wanted to though, I said "I swear I'm fine" but he said "it's not worth it, rest this one out champ" and said to take paracetamol before I sleep and go to the doctors the next day if I was still feeling off or what have you.

Reem: Did you go to the doctor?

David: No, I went straight back to the gym [laughs].

Reem: Did Frankie say anything to you?

David: Yep "well done champ" [laughs].

While fighters were often told to 'go to the doctor', this rarely happened. The coaches were not observed following up with this request in any committed way. The fighters appeared to consider such instructions as guidance that did not need to be heeded. Because more often or not, ignoring such 'advice' for the pursuit of performance was 'rewarded' by the coaches as a sign of competence, this can help explain why athletes' understandings of head injuries are limited to aspects of performance.

Again, there is something of an unchoosable choice here, for if the athletes did choose to follow the coach's advice, there was an assumption that a medical expert not tied to the sportsnet would advise them to stop training and competing. Instead, the fighters preferred to seek advice from people they knew would help them maintain their performance. For example, the coaches often drew on technical pointers to improve performance as a means of helping fighters protect themselves from future brain injuries. In so doing, being 'dazed' or 'rocked' become something of a 'teachable moment' for the participants:

[after describing getting rocked by an uppercut]

Reem: What happened after? Did you tell someone?

Dante[37]: Yeah, yeah me coach straight away … so he checked me eyes, felt me head, me chin basically made sure all me faculties were together [laughs]so yeah … sat me out for a few rounds and gave me his words of wisdom [laughs].

Reem: What are his words of wisdom?

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[37] Amateur boxer in his early 20s. Picked up the sport in university 2 years ago.

> **Dante:** "Hands up, chin down, son" [laughs].

This exchange between Dante and his coach shows the role team-doctoring plays in shaping athletes' understanding and management of head injuries in combat sports.

Alongside this, the fighters spoke about engaging in practices set up by their coaches that were specifically geared towards helping them deal with concussive symptoms inside the ring. They also believed that such practices prevented them from sustaining further injuries to the head. The examples below are indicative:

> [After describing a particular drill that prepared her to know 'what it's like to be rocked in a fight']
>
> **Reem:** So how do you think this drill can help prevent you getting further punishment if you're already getting punched in the head to begin with?
>
> **Maddie[38]:** Hmm … I'd like to think that it prepares my head to get used to it so I'm not as startled if it happens in a fight. I imagine if you're not used to it then … then you're more prone to counts or flash knockout or small concussions maybe? [sighs] I don't know, but it looks to me that if you're prepared for it then the impact isn't as bad.

> **Jordan:** My coach says I'm quite prone to head injury 'cus I've got quite a bendy neck. So essentially he said that means that my head tends to snap back when I get hit quite hard. Which to me means that my brain is shaking a little bit more than if my neck was stiff. I don't know if that's true or not but that's why we spend a lot of time conditioning [strength training] me neck to prevent that from happening.

These examples show that fighters draw on their coaches' experiential knowledge to produce lay medical certainty when dealing with concussive symptoms. In this, the 'doctoring' process is no longer associated with the exchange of medical knowledge in connection to symptom management (Safai, 2003). Rather, it is centred around the circulation of performance-oriented understandings that were aimed at helping fighters avoid future brain injuries by

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[38] Professional Muay Thai fighter and freelance artist in her 20s.

increasing their skill base or physical capacity to absorb blows to the head. It is important to recognise that the 'layness' of this knowledge described here disconnects it in important ways from medicine in the normative sense. Instead, such knowledge captures any advice that pertain to managing and treating medical conditions regardless of its origins, evidence base or veracity.

Considering this, team-doctoring provided the fighters with a level of lay medical certainty by giving them an explanation of what went wrong and what to do to stop it happening in the future. Such a pragmatic and clear 'diagnosis', 'prognosis' and 'treatment' is challenging for medical professionals to develop due to the manifold debates, controversies and inconclusions that characterise medical and scientific understandings of concussion (Gaetz, 2017; Malcolm, 2009; Sharp and Jenkins, 2015). These controversies and inconclusions help further understand the allure of simplistic, performance-based advice regarding concussion.

5.5 Feelings of Uncertainty

Given the preceding issues, it is important to highlight the problematic limitations of team-doctoring, because this process is the basis from which fighters understood and managed concussive symptoms as a 'normal' part of their sport. This was particularly evident in a conversation with Nadia[39], after describing how she adopted a similar 'mindset' to that of her coach when dealing with consecutive punches to the head in her last fight:

> **Nadia:**… The thing is like, I know that James [coach] has the same mindset as well, and I think I like somehow subconsciously took it from him where I'm like, 'No, I'm stronger than this [head] injury like I can do this' you know? Fighters fight, it's what we train to do. So we can't afford any distractions.
> **Reem:** Do you think that thinking about your brain health is a distraction?

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[39] Amateur Muay Thai fighter in her 20s. Works as a teaching assistant in a primary school.

Nadia: Erm – I think [pause] maybe during the fight yes? Cause you have to stay focused on surviving the round … but generally uh – I don't think I ever thought about it this way. That's a bit shitty now isn't it? [laughs].

Nadia's (and James') examples are indicative of participants managing, 'surviving' and overcoming symptoms of concussion in order to keep performing. The initial certainty they experience in this process was largely drawn from team-doctoring. Here, the coaches' 'expertise from the street' can provide advice that, although useful at times, is only – "precise for the practical purpose at hand" (Schutz 1970, p.240). In this regard, I argue that this knowledge can no longer serve its purpose once notions about health take precedence over performance.

This is evident in the way that some fighters appeared to lack ways to manage the potential consequences of their repeated exposure to blows to the head. Instead, they were largely dismissive of such issues:

Reem: You were talking about how old fighters tend to end up being punch-drunk and stuff. Is it something that you worry about?

Omar[40]: Uh, no. It isn't. If I do become punch-drunk in the future or have some sort of mental illness or whatever, I'll deal with it when the time comes. Otherwise, it's a waste of brainpower to think about it right now. Yeah, just a waste of mental energy. Live and let live.

Izzy[41]: Think about it this way eh, it's like that one time you cross a red light and you get hit by a bus cause you didn't see the bus coming, like you never know what's gonna happen in life. I don't like thinking about these things 'oh brain damage, oh CTE, oh whatever' cause this is what makes me happy and fuck knows what's gonna happen tomorrow so why worry about it – I really don't like talking about these things, it puts me on edge and I don't like it.

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[40] Amateur kickboxer and psychology student in his 20s.
[41] Professional Muay Thai fighter and coach in her 20s. holds several area titles.

Alexis: So I feel like for me, this is what makes me happy and it's a risk I'm willing to take. I think you take lots of risks in life, you know, I could be like racking my brain by drinking loads (…)[42]So the benefits very much outweigh the harms for me and I just feel like, you know, life is sort of there to live it. So I'm gonna happily deal with the consequences if they ever came.

These responses highlight how transient certainty, lay medical certainty and team-doctoring can symbolically reduce and, in some cases, almost neutralise thoughts and discussions about the long-term side effects associated with head injuries among athletes. The participants were generally aware of the problematic potential of sub-concussive blows to the head but only appeared to display this sort of irreverence, or 'head strongness' (Liston et al., 2016) towards such issues once their certainty was replaced with feelings of uncertainty. Here then, in order to "maintain their athletic self" (Pike and Maguire, 2003, p.245), fighters willingly held onto the beliefs passed on to them from their 'expert' on the street "as long as they do not [yet] interfere with [their] pursuit of happiness" (Schutz, 1970, p.240, my additions in brackets).

Considering this, it quickly became apparent that the participants in this study felt uneasy when asked to speak about the long-term side effects associated with concussion. They found it difficult to speak about the long-term consequences of concussion because it brought about feelings of uncertainty that fell beyond the context of performance. This is because such conversations offered a degree of reflection that made them inevitably front up to a possible reality: that their participation in combat sports can result in serious health-related detriments that can have an impact on their lives more broadly. This was particularly evident in a conversation with Ray[43]:

Ray: It's really, really hard man. But all I do, everything I ever go through, I do this for my little ones yeah. All them long hard hours training day and night. All of it. I do it

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[42] Some of these sections have been removed to help with reducing space because they were not connected to the point being demonstrated here. Removing these extracts did not change the context of the conversation.
[43] A full-time professional MMA fighter in his late 20s.

for them. All the hard work – the leatherin', concussions and that it all pays off later, you know? It all becomes worth it when I see my son happy cus his dad became world champ. All the hours spent away from them training and that, you know? It's hard on them not to have their dad around at a young age you know. But like I said, it's all worth it, it all pays off later.

Reem: Do you think your son will be happy that his dad was world champ 10–20 years from now knowing that there is a chance that his dad might end up with dementia or brain damage because of it? Is this how you think it'll pay off?[44]

Ray: Uh – Jesus Christ Reem! [laughs] why so grim! Fuckin' hell!

Reem: Sorry [both laughing].

Ray: Errm [long pause] I – I dunno… I dunno what to say …Fucks sake I got no words…You got me off guard here, that's a good one that! [laughs]

Reem: Sorry, I can stop talking if this is making you feel uncomfortable, we can stop this [interview] –

Ray: Nah. it's okay, it's all good. I'm a big boy, I can handle it [laughs]… I just – I need to think about this one cus I …my children mean the world to me, you know? I don't – I never thought about it like that, that's it. Like in this twisted way [laughs].

Reem: Twisted? Interesting word choice [both laughing].

Ray: you know what I mean – like sort of blunt…. Like [pause], what if I really end up with Parkinson's or whatever?

Reem: Is it still worth it?

Ray: I don't know at the moment if I'm being completely honest – not after you put it this way [both laughing]. I don't wanna think about it no more… it is what it is though isn't it? I can leave after the interview and drop dead just like that [snaps fingers] on the spot you know what I mean. It's not worth to live your life in fear all the time. I'd rather go knowing that I lived life to the fullest. If this is how I go, then this is how I go…but I suppose you gotta have some balance as well.

Reem: Okay. One last thing. You said you never thought of it [long-term side effects of brain damage] in this 'twisted' way. How did you usually think of it then?

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[44] As detailed in Chapter Three (Section 3.6, p.64), it is worth noting that, in certain situations, the closeness and trust I have developed with some of the participants meant that I was able to have conversations that were productive and non-judgemental rather than provocative.

Ray: Dunno…I reckon maybe – I never thought It'll happen to me maybe? Dunno mate, dunno what to tell ya…

The feelings of uncertainty displayed by Ray resonate with what Adamson (1997, p.134) refers to as "existential uncertainty" which is "the individual's awareness that his or her future is open and undetermined". While the lay medical certainty acquired through team-doctoring seems to provide athletes with a degree of confidence in their ability to manage the physicality of some head injuries (and even on occasion celebrate it), it was ineffective in helping them think through and deal with the consequences of actions that lay beyond the confines of the ring.

Another way in which fighters deflected their feelings of uncertainty about concussion was to highlight how it was more prominent in other sports. Take Elijah's thoughts about concussions in rugby:

Elijah: …other sports are risky, rugby is risky. You always see issues with concussions in rugby in the news. Every person I know who plays rugby is concussed yet you don't see it attached to the negative undertones that we see with fighting. I guess because in combat sports, you're trying to knock the other person out. You're trying to shut off their equilibrium, shut off their brain and knock them out and that freaks people out. Whereas in rugby you're just trying to get the ball off someone and tackle them. But it's essentially the same thing isn't it? If anything, fighting is safer cause it only lasts for a couple of minutes and you fight like 5-6 times year that's like less than one half of one rugby game.

Interestingly, since the majority of the participants in this study are Muay Thai fighters, they often spoke about how their sport was safer compared to other combat sports, particularly boxing. For example:

Khalid: I don't think [concussions are] as common in Muay Thai cause you're using, you know, your full body to score, so not everything is aimed at your head like it is in boxing. It's a full-body combat sport. So you're kicking with your legs, kicking people's bodies, it's not just the head. But in boxing it's pretty brutal because most of your

punches are to the head it can lead to a big negative impact on your brain. I mean I don't need to mention Ali to you, but you saw what happened to him. I suppose it's the same with MMA as well, you know, people whacking each other brains out with tiny gloves, that can't be good.

These examples are similar to how Channon and Matthews (2016) reported ice hockey supporters tended to neutralise the harmful bodily damage that occurred during games by pointing out what 'real' violence looks like in other sports. The participants I spoke with problematised the severity of concussion in other sports and in so doing, they symbolically neutralised the concerns I was raising by claiming that their sport is comparatively safer. This 'thought style' is passed down to athletes through the process of team-doctoring. As such, different ways in which the participants avoided speaking about concussion highlight the limitations of team-doctoring as it helped the fighters avoid dealing with matters of health and illness beyond the pursuit of performance.

In this regard, team-doctoring, which arguably was well suited for managing acute and relatively minor symptoms of concussion to enable continued participation in sport, failed to provide any sustained and considered means of accounting for and then managing, long-term health consequences. Instead, the athletes were unequipped for issues which lay beyond an immediate focus on sporting performance, other than an acceptance of possible physical and mental decline, and some attempts to symbolically neutralise such issues.

5.6 Conclusion

In this chapter, I demonstrate the importance of Atkinson's (1984) discussion of the interdependence of certainty and uncertainty. Considering such an understanding enabled me to account for the changing nature of the participants' experiences of concussion. This has helped highlight a critical element in fighters' experiences and understanding of concussion that is – the transient nature of lay medical certainty.

The majority of the fighters' knowledge about concussion was built on practical advice passed on to them by their coaches whose expertise was key in offering lay medical certainty. This, in Matthews' (2020, p.10) words, largely influenced how fighters "negotiated personal acceptance of culturally shaped notions of appropriate bodily risk". Indeed, when speaking about their personal health and safety in relation to concussion, it was almost always associated with their (in)ability to perform in the ring rather than their overall well-being and seldom included references to formal medical knowledge and expertise.

As such, I describe the participants' understandings of concussion as transient, as their initial, and somewhat confident, expressions of certainty tended to falter once their thoughts went beyond performance-oriented ideas. This was clearly evident in conversations about long-term consequences of brain injuries. It is only then that their responses appeared to be "more governed by sentiment than by information" (Schutz 1970, 241) as they tended to manage feelings of uncertainty by speaking about the personal benefits and enjoyments they have gained through their embodied experiences in combat sports. Considering this, I argue that athletes did not know how to deal with uncertainties associated with the side effects of concussion because such conversations were not part of team-doctoring.

Furthermore, considering Schutz's (1970) ideal types of expertise as a frame for this analysis has allowed me to consider another additional type – the 'expert' on the street – which helped explore the circulation of knowledge in spaces that lack access to conventional medical experts. Apart from offering context-specific and relatable advice compared to formal medical professionals, the coaches reduced the uncertainties associated with concussion to practices that, even though not clearly understood in a well-developed medical, clinical or mechanistic manner, made sense to both them and their fighters. This was because, more often than not, focusing on performance as the main underlying principle for considering and managing concussion, enabled fighters (who follow such advice) to continue their participation in the sport. As such, thinking through this ideal type highlights some important nuances that lie within the social production of lay expertise. This can further explain why some athletes continue to engage in health-compromising practices despite displaying some initial awareness about their implications. To conclude, this analysis

demonstrates some of the limitations of team-doctoring by highlighting the complexities that lie within the different ways athletes develop their understanding of concussion.

Chapter Six – Conclusion

6.0 Introduction

In this chapter I conclude the findings presented within this project. Initially, I begin by providing an overview of the research objectives. Following that I address the empirical, methodological and theoretical contributions of this project, recommendations for future research and some limitations.

6.1 Addressing the Research Aims

This study was aimed at exploring how combat sport athletes think about, understand and manage their experiences with risk, pain and injury. The majority of the existing sociological literature (Malcolm and Sheard, 2002; Malcolm, 2006; 2009; Roderick, Waddington and Parker, 2000; Roderick, 2004; Safai, 2003; 2004; Theberge, 2008a; Walk, 1997; 2004) that examined the provision of medical care in competitive sports settings has focused on sports that tend to have a group of medical health professionals as part of their team. These studies provided valuable insights into the relationships between athletes and their medical care providers. These interpersonal relationships appear to play a central role in the medics' ability to shape their athletes' perceptions and experiences of risk, pain and injury. Apart from Pike (2005), little attention has been given to sports that lack access to such services. According to Safai (2003), this absence of dedicated medical support produced a situation where athletes engaged in 'team-doctoring' – a term used to describe athletes seeking medical advice from teammates and coaches. This term, as mentioned throughout this thesis, was yet to be theorised and empirically described. Considering this, defining, exploring and contextualising the process of team-doctoring in relation to sociocultural interactions, beliefs embedded within the combat sport subculture and the critical role it plays in shaping fighters' perceptions of (ill) health became the central focus of this project. As such, the purpose of this study was to explore the ways in which combat sport athletes gained 'medical' knowledge in sporting spaces that typically do not have access to medical support through the process of team-doctoring.

MACS provide an interesting setting to further contextualise the concept of team-doctoring. There are a number of reasons for this: 1) as has been shown in the two findings chapters, and other connected work (Channon, Matthews and Hillier, 2020a; 2020b; 2021), medical professionals tend to be largely absent and/or excluded from combat sport spaces, except during competitive events, or 'fight nights'; 2) that coaches, not unlike in other sporting spaces, tend to take a central role in gym life and, as has been evidenced here in various places in the thesis, tend to be a trusted voice of authority for the fighters who seek out their thoughts about injuries and (ill)health, and; 3) that due to the extant aim of most combat sports being to cause some level of bodily harm to one's opponent, the training, practice and preparation for competition often includes regular and repetitive injuries, and can infrequently include major injuries to both the body and brain, that fighters and their coaches had to manage and mitigate injury and (ill)health as a 'run of the mill' occurrence.

As discussed in the methodology chapter, this PhD began with an extended period of data collection which focused on the interactions between fighters and ringside medical personnel. The attention directed towards athletes' medical relations and care within their 'team' developed as it became apparent that a sustained focus on such interactions was largely absent within the extant literature. My access to such people through my personal involvement in gyms, fight events and 'medically' orientated conversations between athletes and coaches, represented a useful and important opportunity to contribute to the field of socio-cultural explorations of pain, injury, and medical care in sports. To that end, the findings from this work are firmly set within an existing and robust body of knowledge that shows how athletes prioritise performance over health and normalise pain and injury. What this thesis has done is to demonstrate an important and not fully documented dimension of such academic work – that is, the ways athletes and coaches circulate, perceive and employ, apparent medical knowledge and expertise to help them continue performing in their sport.

Pike (2005) and Safai (2003) both point to the important place that team-doctoring can occupy within the recreation of sporting spaces and subcultures where bodies and brains are routinely risked and sometimes forsaken. And Matthews (2020) shows specifically how knowledge around brain injuries are passed from coach to athletes and athlete to athlete, as they work to negotiate the likely damage to brains that is associated with boxing. Through

this thesis, then, with its extant focus on the social interactions taking place within these more-or-less coherent teams, I have provided a partial but useful window into how these processes happen.

This means that future scholars will hopefully pay much more attention to the medical care and knowledge of medicine that circulates within 'teams' of athletes. Of course, much work has focused on how this happens within teams whereby medical professionals occupy a position of more-or-less authority and influence. What I have demonstrated here is the importance of situating the 'team', specifically coaches and athletes, within the medicalisation of sport. No published academic work can focus on everything, and while the contribution that social science scholars of sports medicine have delivered in terms of developing critical knowledge of medical relationships and care in sport is essential, when taken together as a body of work, it has not sufficiently situated the place of lay knowledge, lay expertise and social interactions focused on medical care which occur in the absence of medical professionals. This then, as the evidence in this thesis shows, leaves out a central feature of how athletes and people involved in sport, might develop their knowledge about their bodies, (ill)health and ways to manage various injuries. Further, I have used a focus on concussion and brain injuries as a case study to shine empirical light on this process.

The contemporary focus on the 'concussion crisis' (Malcolm, 2017) has provided a useful empirical case from which to see how the process of team-doctoring unfolds. Concussion and associated brain injuries are clearly a biomedical issue, but they are also a social one (Malcolm 2016; Matthews, 2020). And that has been, yet again, demonstrated here, by focusing on the ways in which knowledge produced in large part within a team of fighters and coaches, provided a simplified and transient certainty about what concussions and brain injuries were. This knowledge was focused on continuing or returning to training and competition, rather than maintaining or enhancing health. This is not to say that medical professionals in sport exist outside of a similar process, but in relying on the lay expertise of coaches and other athletes, it seems that team-doctoring is uniquely placed to provide 'medical' advice that does not align with the basic Hippocratic principles of medicine.

Matthews (2020, p.15) demonstrates how "certain important elements of lived experiences … enabled boxers to value their own 'insider' knowledge above that of 'outsiders'". The work in this thesis has shown how the knowledge and social interactions that shape and frame similar lived experiences become manifest. Of course, what I outlined in the literature review, evidenced especially in Chapter Four and reiterated above in relation to the organisational distinctiveness of combat sports is key here. These sports are not culturally unique, but they do contain specific distinctive elements that are at least dramatically clear when considered in comparison to other sports. For example, learning to get hit in the head and keep performing, while useful in some other sports, like rugby, certainly is not an extant focus in training exercises like it is in some combat sport spaces (Matthews, 2020). Given this, I argue that combat sports are then a useful case study from where to flesh out Safai's (2003) comments about team-doctoring.

The notion of team-doctoring certainly has a 'common-senseness' to it. Getting advice from people who you became close with, via your shared love of giving and receiving punches in the face, might seem obviously problematic to most people. But the absence of an extended academic focus on what this process looks like, even if there is some implicit or assumed recognition of it in extant work on medical care in sport, means that the existing critical social scientific account of sports worlds remains under-developed. And while this work adds only incremental empirical insights to broader discussions of pain and injury in sport, it has added much needed empirical and theoretical weight to how scholars can understand medical care, or, depending on their definition, the absence of it, in certain sporting spaces. To further substantiate these claims, it is worth re-detailing some of the specific contributions that have been made across the thesis.

6.2 Outcomes: Contributions to Knowledge

I embarked on this project by producing a theoretically informed typology of medical support in sports (Chapter Two, section 2.3). This work was related to a discussion of the organisational distinctiveness of MACS, and literature on concussion and brain injuries were considered as a topical example of where medical care and the specifics of combat sport

might come together. The purpose of this was to provide a general overview of the different types of medical support presented in academic literature, and see how this might usefully be considered in relation to brain injuries and combat sports. By casting a 'wide net' in terms of reviewing literature on the social scientific analysis of sports medicine, this exercise has helped me identify the 'foreshadowed problems' that I have highlighted above. Through this is was apparent that the majority of the existing literature has focused on 1) the relationships athletes have with different medical professionals, 2) relations between medical professionals of various types, qualifications and experience levels and 3) the occupational uncertainties, tensions and pressures that sport medicine professionals face when practicing medicine in non-medical settings. With that it became increasingly apparent that sports that lack access to medical care have received little scholarly attention – the notion of team-doctoring was thus found to be useful, but under theorised and evidenced.

After discussions of methods, Chapter Four focused on exploring and empirically highlighting key elements of team-doctoring. In particular, I drew on ideas from Nixon's (1992) social network analysis and Fleck's ([1935] 1979) work on thought collectives to add theoretical utility to understand the process of team-doctoring. It is important to remember here that this idea was proposed, or perhaps 'coined', by Safai (2003) in a somewhat passing manner. This is not a critique of her work as its extant focus was elsewhere, but it certainly helps contextualise the theoretical development that I have undertaken. Specifically, that I returned to 'classic' work in the sociology of medicine and the sociology of sport as the starting point from which I developed Safai's initial idea.

These works were useful in helping me 1) contextualise the production, circulation and transfer of lay knowledge about (ill)health and practice of lay sport medicine within a group setting and 2) provide a conceptual framework that aligned with the observations and interview data collected. Considering this, I define team-doctoring as the process whereby apparent medical knowledge is (mis)understood, recommended, transferred, interpreted, embodied and developed within a somewhat coherent team. While there might be more or less opportunity for those with formal medical knowledge to influence this process, the term is most usefully applied to groups of athletes who exist in relative isolation, for one reason or another, from formal medical expertise.

The organisational distinctiveness of combat sport gyms and subcultures means that they are spaces in which fighters and their coaches can be relatively isolated from medical professionals. In other words, using Nixon's (1992) language, such sportsnets are often limited to coaches and their fighters, and typically have no access to club affiliated medical support. As such, conceptualising the process of team-doctoring within combat sport settings offered an interesting viewpoint from which to develop understanding of medical care and relationships in sport. Importantly, except for in quite specific situations, the data repeatedly shows that team-doctoring in combat sports was heavily shaped by and centralised around the coach's experiential lay knowledge. This element of the analysis echoes Fleck's ([1935] 1979) unidirectional and hierarchical nature of knowledge transfer within thought collectives. But when aligned with Nixon's (1992) notion of the sportsnet, I was better able to account for the nuances and complexities of this process as it plays out in the gym. This analysis is further bolstered by weaving in ideas utilised by Kotarba (1983) and Prior (2003). Drawn together, these academic ideas helped demonstrate the continued importance of early work within the sociology of medicine (Arksey, 1994; Fleck, [1935] 1979; Freidson, 1960; Löwy, 1988) and sociocultural explorations of sport (Hughes and Coakley, 1991; Kotarba, 1983; Nixon, 1992, 1993). That such works still hold relevance in the contemporary world of sport demonstrates the common and stubborn nature of the problems I am seeking to explore. Furthermore, this is related to why the bulk of my arguments resonate with a broad body of work exploring pain and injury in sport. Now though, I hope to have added to this a more robust account of the place that the 'expertise' and experiences of coaches plays within the framing of athletes understanding of, and interactions with, ideas about health, illness, pain and injury.

By using contributions from these 'classics', the work presented here has added a theoretical scaffolding for what was previously an under theorised and largely common-sense, if logically appealing idea – that sports people will probably engage in medical care between themselves if they do not have access to medical professionals. These ideas, when combined as they have been here, frame an understanding of how 'medical' knowledge is passed between individuals within a more-or-less coherent groups (In particular, Arksey's (1994) and Fleck's [1935] (1979) work). They have highlighted how 'expertise' come in various forms and must be considered outside of a simple call to the authority of medical professionals (In particular,

Schutz's (1970) work). And, highlighted some of the cultural specifics of sporting spaces where 'cultures of risk' have been shown across multiple decades of scholarship to dominate especially within performance orientated sports (The work of Nixon (1992) and those who followed him was particularly helpful here). Of course, this is only a first, although I would argue an important attempt, at theorising team-doctoring and other scholars would do well to advance the ideas I have presented here. But what I have provided here is a theoretical starting point which explicitly details what Safai (2003) and others (Charlesworth and Young, 2004; Matthews, 2020; Pike, 2005) have left implicitly discussed in their work.

Doing this theoretical work should also ensure that the idea of team-doctoring can be conceptually 'grasped' and thus more readily integrated and critiqued by those scholars who have been working within the medical sociology of sport for some time. By attempting to 'formalise' the ways that athletes and coaches might interact in relation to medical care, I have taken an idea which, due to its lack of clear definition, explanation or empirical exploration, could be used in an assumed and/or haphazard fashion. Therefore, this work has then been an important step in temporarily locking down the idea of team-doctoring. This will hopefully encourage other scholars to engage with, critique and develop, the theoretical work I have done here, and also, further flesh out the empirical findings I have presented. And within these findings are important details that can add in various ways to the understanding of why athletes might continue to risk their bodies to be involved in sport.

Empirically describing team-doctoring has highlighted some key aspects of the process, but also brought forth some notable issues. Team-doctoring was the main way in which athletes understood and managed their experiences with sport-related (ill)health – this is a very important finding considering how much of the previous work had focused on sporting spaces where medical professionals were present. The participants favoured their coaches' context-specific advice over that of, the largely excluded, medical professionals, due to their experiential knowledge in the sport and trusting interpersonal relationships they had established with them. This was the basis from which the participants avoided and, in some cases, rejected 'outsider' medical knowledge, advice, and treatment. Because of that, the athletes' knowledge about sport-related pain and injury was predominantly performance-oriented. The athletes accepted the normalised presence of pain and injury as a prerequisite

for their sport participation. While they sometimes used medical terms to describe their conditions, they did not feel like they needed to seek formal medical care, and subsequent treatment, to confirm their diagnoses. As such, they preferred the practicality of team-doctoring because it allowed them to work around their pain and injury experiences and continue their engagement in the sport. There is perhaps an interesting 'paradox' here, that the acknowledged infiltration of medicalisation into daily life, has resulted in some medical language and treatment being discussed, proposed and 'prescribed' by people with no formal medical qualifications. That is not to say that doctors and other medical experts no longer play a pivotal role in the medicalisation of everyday life, but that patients and other lay people also have an influence on this process (This is particularly evident in Arksey's (1994) work). This dimension of medicalisation has not been previously described within sporting spaces. And it is something that should be a feature of future empirical explorations of the way sports medicine is structured, and how ideas about illness, pain, injury and medical care are circulated within various sports, especially those, where damage to bodies and brains is frequently normalised.

Perhaps unsurprisingly, the process of team-doctoring, although sharing commonalities with how formal 'doctoring' takes place in sport, had important differences. For example, the process of seeking coach-led team-doctoring was not as straight forward as the participants initial thoughts about this seem to be. It was apparent that coach-led team-doctoring, while favoured, had limitations which in some ways were similar to the lack of trust the fighters expressed towards healthcare professionals. This was evident in certain situations where the fighters often engaged in self-diagnosis and athlete-to-athlete team-doctoring to assess whether or not to seek advice from their coaches in the first place. As there was a shared understanding amongst the fighters that their coaches played a role in their ability to compete and remain in the sport. This meant that the fighters had to be cognisant of how they managed their coaches' expectations and thoughts about them. Simply put, they often hid pain and injury from the very person who they thought was the best placed to help them understand and treat it. This process, was influenced by the performance ideologies, in particular the acceptance of pain and injury as an normal part of being involved in competitive sport, that dominate their sports and the 'thought style' of their team. As such, despite their trusting interpersonal relationships, and apparent belief in the coach's ability to help them,

seeking coach-led team-doctoring, in certain situations, was something akin to an 'unchoosable' choice for these athletes – i.e. they could ask for help, but they thought this might well result in the coach not allowing them to compete, and therefore they often did not do so. It was within such occurrences that athlete-to-athlete team-doctoring became more apparent. And in this regard, athletes would seek out other athletes to 'compare notes' not simply about curing or removing pain and injury, but often how to continue to train and compete with it.

Further to this, the preceding points about team-doctoring demonstrate that athletes gained their knowledge about (ill)health from lay people without formal medical qualifications who are more likely to reaffirm rather than challenge the health compromising norms that dominate risky body cultures. Several scholars (Elwyn et al., 2000; Pols, 2014; Prior, 2003; Sarangi, 2001; Wilcox, 2010) suggest that lay experts tend to reappropriate 'medical' knowledge to 'practicalities' that better align with their personal, specific, and idiosyncratic situations and experiences. Within such work, and perhaps during some stages of this project, there seems to be an underlying assumption that athletes should 1) prioritise health over performance 2) and privilege scientific medical knowledge over other, possibly legitimate forms of lay knowledge when it comes to dealing with their experiences of risk, pain and injury. I would argue that this broadly stems from the 'medicalisation thesis' described in Chapter Two (section 2.1, p.7), whereby modern medicine has largely been accepted as the traditional 'fixed point of reference' for what constitutes health and illness within society. Exploring the details of whether this is appropriate has not been the focus of this study, but it is important to explain this point of reference.

As Lupton (1994) argues, the medicalisation of society has encroached into defining what is classed as 'normal' functioning of the human body. Modern medicine as an 'institution of social control' has been a topic of considerable concern for medical sociologists since the nineteenth century (Freidson, 1970; Illich; 1976; Larson, 1978; Zola; 1972). Particularly in relation to how the lay public passively accept, speculate, perceive, and/or question the authority and expertise of the medical professions. While again, these discussions were not a central focus within this thesis, it is important to acknowledge the elements of social control and surveillance that modern medicine exercises over peoples' behaviours, bodies and lives

more broadly. That athletes and some coaches seemed to in some ways subvert this medicalised power and control by taking their knowledge development and treatment into their own hands, is worthy of more study. Of course, it might be easy to assume that much of this team-doctoring is 'wrong', or at least uninformed, but as Matthews (2020) shows, there are ways in which, especially when alternative outcomes to health are prioritised, that forms of embodied and culturally specific *knowhow* become of great utility to people. On the whole, my thoughts in relation to the data collected here is that team-doctoring, while not necessarily damaging, provided so much leeway around the re-creation of deleterious behaviours that researchers should at least focus more critical empirical attention towards it. This is particularly the case when considering the long-term effects on brain health that appear to be associated with athletes' involvement in heavy contact sports.

To that end, Chapter Five explored fighters' understanding and management of concussion and repeated blows to the head. One of the key findings here was the manner in which athletes' initial certainty, about what they thought a concussion was, or was not, was quickly replaced by feelings of uncertainty and doubt once their thoughts went beyond performance-oriented ideas. This revealed that the fighters' knowledge and understanding about how to manage concussion symptoms was organised around avoiding 'blows' to the head and trying to 'survive' the round in order to maintain their athletic performance. Such understandings were based on practical advice passed on to them by their coaches through the process of team-doctoring. And it was here, in their temporary focus on maintaining performance that the fighters found some level of certainty around concussion and blows to the head. This is because, the complexity of what is or is not a concussion, how this may or may not affect their short- and long-term health, and how all this related to their future lives inside and outside of the ring, were not topics of focus as they might well have been, it is fair to cautiously assume, had they spoken to a relatively detached medical professional such as their GP.

This start point was developed in relation to considering theoretical work on 'expertise'. By drawing on Schutz' (1970) ideal types of expertise, I proposed the 'expert 'of the street as a theoretical development in order to further understand the role of coaches in circulating 'concussion' knowledge amongst their athletes. Here, I describe the 'expert on the street', as a lay person that offers practical advice, that is not commonly possessed by conventional

'experts'. Such advice provided athletes with a lay medical certainty that made them confident in their ability to manage their symptoms. It is important to note that while these ideal types, as Schutz (1970, p.240) puts it, are "mere constructs", their typification remain invaluable for the exploration of "different provinces of knowledge". This means that the interactional process whereby team-doctoring took place, was given an interpretive frame informed by robust social theory. And in so doing, the central role that combat sports coaches play in shaping the subcultural norms associated with medical care in their gyms was given conceptual purchase. The previously mentioned organisational distinctiveness of combat sport spaces certainly plays some role in this process. And by aligning Schutz' (1970) work with an understanding of this and Nixon's (1992) framing of sportnets, it is my contention that an understanding of some of the problems associated with team-doctoring have been advanced. It is by considering this process in relation to a topical health and wellbeing issue such as concussion that this has been enabled. There are then intertwined empirical and theoretical contributions that have been developed across this thesis.

A further contribution that has been made within this thesis relates to its methodological design. While there is nothing unique about the project in terms of methods, in fact, I draw inspiration from ethnographic ways of understanding the world that were popularised in scholarship from over half a century ago, there does seem to be something in applying a level of 'immersion' or at least repeated interviewing, that has enabled the development of different forms of knowledge especially in relation to concussion and brain health. Let me explain a little.

The shift from certainty to uncertainty described above was captured by employing methodological strategies that prioritise immersion, observations and repeated bouts of interviewing (as detailed in Chapter Three) to encourage openness and flexibility which allows for different forms of knowledge to come to the fore. Accounting for this provided 'epistemological space' for the potential complexities, contradictions and incoherencies that lie within the participants' thoughts and behaviours that can be otherwise hidden or missed by inflexible methods such as surveys and questionnaires.

Given that medical professionals are still striving to achieve 'medical certainty' (Malcolm, 2009) about the diagnosis and management of concussion, it is not surprising that this thesis, along with recent studies that examined combat sport athletes' attitudes towards and reporting of concussion revealed several 'gaps' and misconceptions in their understanding (Bennett et al. 2019; Follmer, Varga, and Zehr, 2020). Therefore, it is expected that combat sports athletes' understandings will be complex, contradictory and incoherent. However, the reliance in these studies (Bennett et al. 2019; Follmer, Varga, and Zehr 2020) on surveys and questionnaires means that participants' responses were largely restricted to predetermined questions and reductive answers. Such methods can lead to problems such as 1) limiting respondents' abilities to express themselves, 2) issues around interpretations of what the pre-selected answers actually mean to the sample, 3) a lack of opportunities to clarify questions and/or answers, 4) the reification of researchers' assumptions about important themes and 5) the production of a static picture of participants' understandings and experiences.

Given the previously outlined lack of scientific and medical agreement surrounding concussion (section 5.2, p.79), these scholars do not necessarily have a solid conceptual basis from which they can adequality build a reliable, inflexible method that captures the realities of athletes' experiences and understandings of brain injuries. Indeed, this argument has even been acknowledged by some scholars, with Bennett et al. (2019) pointing out that the absence of definitions of concussion and brain injuries in their questionnaires affected the accuracy of athletes' self-reporting (also see Robbins et al., 2014).

Here then, it appears that the perceived expectations about what knowledge and behaviours the fighters should possess seem to be somewhat disconnected from the reality of fighters' day-to-day lives. Some of which included: 1) confusion regarding the different terms used to describe different forms of brain injury (Bennett et al. 2019), 2) 'failure' to understand the limitations of brain imaging in concussion assessments and evaluations (Lystad and Strotmeyer, 2018) and 3) fighters' noncompliance to return-to-play guidelines (Follmer, Varga and Zehr, 2020).

Yet, Lystad and Strotmeyer (2018, p.4, my emphasis) argue that Muay Thai fighters have *"reasonably good concussion knowledge*, attitudes, and reporting intention"*. These findings were based on a survey scoring system (Rosenbaum Concussion Knowledge and Attitude Survey (RoCKAS)) similar to the one used by Follmer, Varga, and Zehr (2020) (whose findings suggest otherwise). How then, have athletes gained such an understanding when medical professionals have not? I argue that this logical inconsistency is most likely an artefact of inflexible methodological procedures rather than a nuanced representation of athletes' actual understanding and experiences of concussion. In other words, what was captured here, was most likely the athletes' initial transient certainty about the topic, which I argue, based on the far more detailed picture that I discovered, is an epistemological consequence of inflexible methods.

In this regard, the broad methodological issues with surveys and questionnaires, combined with the lack of clinical and scholarly consensus over what concussions are and how athletes should understand them, can create various issues that threaten to undermine the validity of the researchers' recommendations. In particular, based on their findings mentioned earlier, Lystad and Strotmeyer (2018, p.6) argued that "only modest overall improvements" are to be expected from further implementation of concussion education programmes that aim to increase fighters' awareness about the topic. In this light, they suggest that further studies should start moving towards considering the cost-effectiveness of such programmes. While also suggesting that further education in relation to optimising and addressing the gaps in athletes' concussion knowledge translation is "vital" (Lystad and Strotmeyer, 2018, p.6). There is a strange tension here which I believe is produced when scholars unthinkingly reach towards athlete education as a recommendation, while also, employing methods which are not particularly well suited to developing a nuanced understanding of athletes' experiences, knowledge and therefore requirements for education.

Given this position, I argue that combat sport athletes having "reasonably good concussion knowledge" (Lystad and Strotmeyer, 2018, p.4) is more likely an artefact of inappropriately deployed methods, rather than a carefully considered representation of the knowledge of the people that the researchers are seeking to understand. And if this point is accepted, it is important to also acknowledge that the conclusions, recommendations for policy and

practice, and suggestions for further education will be based on methodologically flawed findings.

With all this in mind, I suggest it is time to think again about the conceptual tools and methodological approaches scholars are employing to explore athletes' lay understanding of concussion (and social life more broadly). The goal here is to provide a more coherent alignment between the 'foreshadowing problems' which several scholars (Dean and Bundon, 2019; Matthews, 2020; Malcolm, 2009;2021, Safai, 2003; Liston et al., 2016) have reported and the strengths and weaknesses of the methods employed.

Having said that, the purpose of this study is not to provide recommendations or solutions on how to better equip athletes to understand and deal with the deleterious effects of brain injuries. Rather, in this chapter, my aim was to further highlight the complexities that lie within the different ways athletes develop their understanding of concussion (Matthews, 2020; Liston et al., 2016). Other scholars that explored athletes' knowledge about concussion were quick to recommend further athlete and/or coach education and awareness as part of a working solution within their concluding remarks (Bennett et al., 2019; Follmer, Varga, and Zehr, 2020; Lystad and Strotmeyer, 2018). This seems to be their default option when considering future directions, regardless of the outcome of their findings.

Indeed, there is an overwhelming emphasis from scholars and sports governing bodies on educating athletes about signs of brain injury and associated risks, and the importance of reporting symptoms (Bagley et al., 2012; Kaut et al., 2003; Miyashita et al., 2013; Robbins et al., 2014). This approach assumes that if athletes have an increased awareness about such topics, their interest in maintaining health will manifest into protective behaviours. Yet, as demonstrated in this study, the athletes were invested in maintaining their health in relation to their athletic performance rather than their wellbeing more broadly. The athletes displayed a broad awareness of the detrimental consequences of brain injuries, but as the data revealed, they were more invested in 'practical' forms of knowledge. Similarly, Conway et al. (2020) argues that despite having 'considerable' knowledge about concussion symptoms and aetiologies, athletes tended to ignore, conceal and/or underreport them (for similar discussions see Chrisman, Quitiquit, and Rivara, 2013; Corman et al., 2019; Delaney et

al., 2015; Kerr et al., 2016; Liston et al., 2016; Ruston et al., 2019). In other words, athletes still choose to engage in health compromising practices and performance continues to take precedence over health.

To reiterate, suggesting such solutions from findings based on inflexible methods which do not maintain epistemological space for the process of knowledge building and the interdependence of uncertainty and certainty, is largely ineffective in tackling the concussion crisis in sport. Indeed, this study demonstrated that considering the conception of knowledge as a process rather than a static picture, can provide a more nuanced understanding of some of the reasons why combat sport athletes choose to continue to engage in health-compromising behaviours. This have offered continuing insight into the experience of concussion which, when further developed, will be a useful component of future recommendation for policy and practice.

When taken together, these findings demonstrate the significance of team-doctoring in understanding the circulation of lay sport medicine within sporting spaces that are relatively isolated from formal medical support. This process does not only shape athletes' perceptions about sport-related injury and pain tolerance, but also mediates how they come to perceive formal medical knowledge, treatments and interventions. This can be problematic, as even in situations where team-doctoring is limited or unavailable, seeking formal medical support is often deferred and unheeded. As mentioned earlier (p.117), while there is an implicit assumption here that athletes should prioritise their health more broadly, one should not deny the effectiveness of modern medical procedures and advancements. As Prior (2003, p.53) neatly puts it "scientific and medical experts might not be able to instruct us about what we ought to do, but they can instruct us about what it is and what it is not possible to do – and how, exactly, to do it". And in the absence of scientific and medical experts, athletes seem to increasingly turn to lay experts for their 'effective functioning'.

As a result, athletes' understandings and management of risk, pain and injury predominantly revolved around maintaining and improving their sporting performance. This was evident in the ways in which the participants continue to display risky attitudes towards their bodies by accepting, rationalising and normalising their engagement in health compromising practices

and behaviours as part of their sport. Yet, this process of athletes seeking support from their coaches, teammates and/or alternatives sources in response to pain and injury remains largely unexplored within the sociology of sport. Particularly in ways that pertain to methodologies that maintain a dedicated closeness to the athletes' lived experiences and understandings with as much of the complexities, contradictions and incoherencies accounted for as possible. Most prominent in this respect is the lack of attention which has been paid to the experiences of sportswomen (Brown, 2021; Findlay et al., 2020). What lies ahead is research that begins to further explicate team-doctoring in relation to the 'teamness' aspect of this process as a point of departure, especially in settings and situations where coaches are no longer seen as 'experts' on the street. This thesis provides a conceptual framework and empirical details that can help develop such analysis.

While the socio-cultural understanding of pain and injury in sport has a well-developed empirical and theoretical basis, this thesis has demonstrated that there are still areas in which our understanding of connected and adjacent topics can be developed. In particular, the theoretical ideas I have drawn together here from the sociology of medicine and the sociology of pain and injury in sport, provide some level of conceptual purchase on the idea of team-doctoring. I would encourage scholars to develop their understanding of these ideas in different empirical spaces including paying attention to how team-doctoring might work alongside or in opposition to more formal medical support that athletes receive, especially in well-funded team sports.

As briefly mentioned in the methodology chapter, for the sake of coherence, the data I collected from sportswomen has been removed from this final version of the thesis. Work on this area is continuing and scholars will no doubt expand upon the important focus that others have taken in relation to sportswomens' specific health issues. This work is important and I see a number of ways in which it can be used to refine and critique what has been written here. This is especially in relation to 'women's issues', that are not readily discussed in most sporting contexts. Here, menstruation (Brown, 2021; Findlay et al., 2020) and biomechanical issues that appear to result in higher rates of injury for women and evidence that concussions are 'worse' for women (Chaychi et al., 2022; Covassin et al., 2011), may all be usefully explored by considering them in relation to team-doctoring.

While this project did not conduct a systematic review of work on athletes' attitudes and knowledge about concussion, it was quite clear that the vast majority of work in this area conducted by social scientists employed what I would argue are relatively shallow methods. By this I mean survey and one-off interviews whereby participants initial thoughts are taken as the primary data source with limited room for the complexity of how these thoughts might develop and change as participants knowledge is carefully probed and challenged. Again, I do not claim this to be a methodologically novel idea, but within an area of research which seems to prefer large scale understandings of people 'attitudes', it seems appropriate to me at least, to recommend that future work focuses on getting to know more about the lives of those people who repeatedly sacrifice their bodies and brains to be involved in sport.

I hope the work presented in this thesis is useful as a platform or start point from which future scholars will continue to explore how athletes and sportspersons health and wellbeing can be maintained and enhanced. Key here, is my motivation to, in some small way, stop people in various sports from suffering due to their involvement. And if effective work is delivered in this direction it can simultaneously contribute to helping people use sport to flourish.

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Appendix 1

Interview Guide: Fighters

Introduction

Thank you for agreeing to take part in this interview today. You have the right to withdraw at any time and you do not have to answer questions you do not wish to. I'll just remind you that I'll be asking you questions about your experiences with ringside medics and that the whole interview will be recorded. Have you got any questions before we proceed?

Introductory Questions

- Can you tell me a little bit about yourself? (note – ensure important biographic information is included in the answer)
- How did you get into [respective combat sport]?
- Can you talk me through your career so far? Including how many fights you've had?
- Could you describe a typical training day/week?

Main Questions

- Have you had injuries from being involved in [sport]?
- What sort of injuries do you commonly get from [sport]?
- Do you seek medical help? (in relation to injury obtained from sport)
- Do you find yourself downplaying an injury in order to participate?
- Do you sometimes feel obliged to fight while injured?
- Have you ever fought with a serious injury?
    - Probe: how it felt during and after
- Can you describe your experiences with ringside medics or any medical personnel during the event?
    - Probe: recent, positive, negative, before and after the fight, between bouts, in the ring

Summary Question

- Is there anything else that you would like to add?

Thank you so much for participating in this interview.

NHS 111 Service
Dial 111 when you need medical help but it's less urgent than 999.
The NHS 111 service is staffed by a team of fully trained advisers, supported by experienced nurses and paramedics

Samaritans
Confidential support for people experiencing feelings of distress or despair.
Phone: **08457 90 90 90** (24-hour helpline)
Website: www.samaritans.org.uk

Rethink Mental Illness
Support and advice for people living with mental illness.
Phone: **0300 5000 927** (Mon-Fri, 10am-2pm)
Website: www.rethink.org

Sane
Charity offering support and carrying out research into mental illness.
Phone: **0845 767 8000** (daily, 6pm-11pm)
Email: sanemail@org.uk
Website: www.sane.org.uk

Mind
Promotes the views and needs of people with mental health problems.
Phone: **0300 123 3393** (Mon-Fri, 9am-6pm)
Website: www.mind.org.uk

PAPYRUS
Young suicide prevention society.
Phone: HOPElineUK **0800 068 4141** (Mon-Fri,10am-5pm & 7pm-10pm. Weekends 2pm-5pm)
Website: www.papyrus-uk.org

No Panic
Voluntary charity offering support for sufferers of panic attacks and OCD. Offers a course to help overcome your phobia/OCD. Includes a helpline.
Phone: **0844 967 4848** (daily, 10am-10pm)
Website: www.nopanic.org.uk

CALM
CALM is the Campaign Against Living Miserably, for men aged 15-35.
Website: www.thecalmzone.net

Appendix 3

NOTTINGHAM
TRENT UNIVERSITY

Participant Consent Form for Interviews

Research Project Title:
Fight Doctors: Exploring Medical Care in Combat Sports

I have read and understood the participant information sheet provided about the ☐
above project.

I understand that my participation is voluntary and that I am free to withdraw at any ☐
time without giving any reason.

I understand that I am free to stop the interview at any time and do not have to ☐
answer questions that I do not want to.

I am aware that the interview will be digitally recorded then transcribed and used as ☐
a basis for research.

I understand that the information I provide will be treated with confidentiality and ☐
anonymity.

I am aware of the limits of confidentiality mentioned in the participant information ☐
sheet.

I have been given the opportunity to ask questions about the project. ☐

I agree to participate in this project. ☐

Participant : _____ Signature : _____Date : _____

Researcher : _____ Signature : _____Date : _____

NOTTINGHAM TRENT UNIVERSITY

Participant Consent Form for Observational Research

Research Project Title:
Fight Doctors: Exploring Medical Care in Combat Sports

I have read and understood the participant information sheet provided about the above project.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	☐
I am aware that the researcher will be taking field notes during the observation(s).	☐
I consent to being photographed/recorded by the researcher and I am aware that the photos/recordings may be used to supplement field notes, in research seminars and conferences, and teaching environments.	☐
I understand that I am free to stop the observation(s) at any time.	☐
I understand that the information I provide will be treated with confidentiality and anonymity.	☐
I have been given the opportunity to ask questions about the project.	☐
I agree to participate in this project.	☐

Participant: _____ Signature: _____ Date: _____

Occupation: _____

_____

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands what will be done.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Researcher : _____ Signature: _____ Date: _____

Participant Information Sheet – Fighters

1. Research Project Title

Fight Doctors: Exploring Medical Care in Combat Sports

2. Invitation

You are being invited to take part in this research project. Before you decide to do so, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask the research team if there is anything that is not clear or if you would like more information.

3. What is the purpose of this study?

The purpose of this study is to understand the experiences of medical personnel who work at combat sports events. This study will aim to promote fighter safety and help provide the best medical practice.

4. Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you will be able to keep a copy of this information sheet. You will also be asked to sign a consent form.

5. What will happen to me if I take part?

You will be asked to take part in an interview. The researcher will contact you to organise a time and place that is convenient to you. You will be asked to take part in an interview. The researcher will contact you to organise a time and place that is convenient to you. You will be asked questions about your background and participation in combat sports and your thoughts and experiences with medical professionals. The interview will last around an hour, depending on how much you want to say at the time. You are free to stop the interview at any time and do not have to answer questions that you do not want to. The interview will be digitally recorded so that it can be transcribed and used as a basis for research.

6. Will my taking part in this project be kept confidential?

All the information collected about you during the course of the research will be kept confidential. It will be anonymised and you will not be able to be identified in any reports or publications. However, there are limitations to this confidentiality. For example, the researcher would be required to report any potential threats to the safety of yourself or others that you may disclose. While it is not expected that such information will be discussed in the interview it is important that you are made aware. If you have any questions about this please discuss with the researcher before you give consent.

7. **Can I withdraw my consent and any information collected about me?**

   You can withdraw your consent and some or all of the information you have provided for up to one month after the interview, without giving any reasons. After this period, your anonymised data may be in academic presentations or publications. However, this does not apply to disclosures that cross the limits of confidentiality. You will be requested to provide a unique identifier relevant to you (e.g. first pet's name) to attach to your data and will be asked to cite this identifier if you wish to withdraw. To withdraw please contact the research team.

8. **What will happen to the results of the research study?**

   The results of the research will be part of a PhD research project and are likely to be published in sociology journals, research seminars and conferences, and teaching environments. Again, you will not be identified in any report or publication and your anonymity and confidentiality will be protected at all times.

9. **Contacts for further information**

   Project researcher:
   Reem AlHashmi (PhD Student, Nottingham Trent University)
   Email: reem.alhashmi2018@my.ntu.ac.uk

   Project supervisor:
   Dr. Christopher Matthews (Senior Lecturer, Nottingham Trent University)
   Email: christopher.matthews@ntu.ac.uk

Thank you for taking the time to read this sheet. Please feel free to ask any further questions. If you decide to take part in this research study then you will subsequently be asked to sign a consent form. You will be given a copy of the information sheet and a signed consent form to keep.

Participant Information Sheet - Medics

1. Research Project Title

Fight Doctors: Exploring Medical Care in Combat Sports

2. Invitation

You are being invited to take part in this research project. Before you decide to do so, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask the research team if there is anything that is not clear or if you would like more information.

3. What is the purpose of this study?

The purpose of this study is to understand the relationships between combat sport athletes and ringside medical personnel. This study will aim to promote fighter safety and help provide the best medical practice.

4. Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you will be able to keep a copy of this information sheet. You will also be asked to sign a consent form.

5. What will happen to me if I take part?

You will be asked to take part in an interview. The researcher will contact you to organise a time and place that is convenient to you. You will be asked questions about your background, involvement in combat sports events and thoughts about the medical profession in combat sports.. The interview will last around an hour, depending on how much you want to say at the time. You are free to stop the interview at any time and do not have to answer questions that you do not want to. The interview will be digitally recorded so that it can be transcribed and used as a basis for research.

6. Will my taking part in this project be kept confidential?

All the information collected about you during the course of the research will be kept confidential. It will be anonymised and you will not be able to be identified in any reports

or publications. However, there are limitations to this confidentiality. For example, the researcher would be required to report any potential threats to the safety of yourself or others that you may disclose. While it is not expected that such information will be discussed in the interview it is important that you are made aware. If you have any questions about this please discuss with the researcher before you give consent.

7. **Can I withdraw my consent and any information collected about me?**

   You can withdraw your consent and some or all of the information you have provided for up to one month after the interview, without giving any reasons. After this period, your anonymised data may be in academic presentations or publications. However, this does not apply to disclosures that cross the limits of confidentiality. You will be requested to provide a unique identifier relevant to you (e.g. first pet's name) to attach to your data and will be asked to cite this identifier if you wish to withdraw. To withdraw please contact the research team.

8. **What will happen to the results of the research study?**

   The results of the research will be part of a PhD research project and are likely to be published in sociology journals, research seminars and conferences, and teaching environments. Again, you will not be identified in any report or publication and your anonymity and confidentiality will be protected at all times.

9. **Contacts for further information**

   Project researcher:
   Reem AlHashmi (PhD Student, Nottingham Trent University)
   Email: reem.alhashmi2018@my.ntu.ac.uk

   Project supervisor:
   Dr. Christopher Matthews (Senior Lecturer, Nottingham Trent University)
   Email: christopher.matthews@ntu.ac.uk

Thank you for taking the time to read this sheet. Please feel free to ask any further questions. If you decide to take part in this research study then you will subsequently be asked to sign a consent form. You will be given a copy of the information sheet and a signed consent form to keep.

NOTTINGHAM TRENT UNIVERSITY

Participant Information Sheet - Promotors

1. **Research Project Title**

Fight Doctors: Exploring Medical Care in Combat Sports

2. **Invitation**

You are being invited to take part in this research project. Before you decide to do so, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask the research team if there is anything that is not clear or if you would like more information.

3. **What is the purpose of this study?**

The purpose of this study is to understand the relationships between combat sport athletes and ringside medical personnel. This study will aim to promote fighter safety and help provide the best medical practice.

4. **Do I have to take part?**

It is up to you to decide whether or not to take part. If you decide to take part you will be able to keep a copy of this information sheet. You will also be asked to sign a consent form.

5. **What will happen to me if I take part?**

If you decide to participate, as a promotor, you will be asked to grant official access to combat sport events arranged by your promotion. The researcher will utilise this access to observe/shadow the role of medical care providers involved in your events. The researcher will seek informed consent from medical personnel before every observation. They might be asked questions about their background, involvement in combat sports events and thoughts about the medical profession in combat sports. The researcher will be taking field notes during the observation(s). they may be asked to be photographed/recorded by the researcher. The photos/recordings may be used to supplement field notes, in research seminars and conferences, and teaching environments. They have the right to decline this request. They are also free to stop the observation at any time and do not have to answer questions that you do not want to. The information obtained from observing their experience will help the researcher gain a

better understanding into how medical care in such settings is administered and how it could be improved.

6. Will my taking part in this project be kept confidential?

All the information collected about you during the course of the research will be kept confidential. It will be anonymised and you will not be able to be identified in any reports or publications. However, there are limitations to this confidentiality. For example, the researcher would be required to report any potential threats to the safety of yourself or others that you may disclose. While it is not expected that such information will be discussed, it is important that you are made aware. If you have any questions about this please discuss with the researcher before you give consent.

7. Can I withdraw my consent and any information collected about me?

You can withdraw your consent and some or all of the information you have provided for up to one month after the observation, without giving any reasons. After this period, your anonymised data may be in academic presentations or publications. However, this does not apply to disclosures that cross the limits of confidentiality. You will be requested to provide a unique identifier relevant to you (e.g. first pet's name) to attach to your data and will be asked to cite this identifier if you wish to withdraw. To withdraw please contact the research team.

8. What will happen to the results of the research study?

The results of the research will be part of a PhD research project and are likely to be published in sociology journals, research seminars and conferences, and teaching environments. Again, you will not be identified in any report or publication and your anonymity and confidentiality will be protected at all times.

9. Contacts for further information

Project researcher:
Reem AlHashmi (PhD Student, Nottingham Trent University)
Email: reem.alhashmi2018@my.ntu.ac.uk

Project supervisor:
Dr. Christopher Matthews (Senior Lecturer, Nottingham Trent University)
Email: christopher.matthews@ntu.ac.uk

Thank you for taking the time to read this sheet. Please feel free to ask any further questions. If you decide to take part in this research study then you will subsequently be asked to sign a consent form. You will be given a copy of the information sheet and a signed consent form to keep.

Appendix 8

Interview Guide: Medics

Introduction

Thank you for agreeing to take part in this interview today. You have the right to withdraw at any time and you do not have to answer questions you do not wish to. I'll just remind you that I'll be asking you questions about your experiences with fighters as a ringside medic and that the whole interview will be recorded. Have you got any questions before we proceed?

Introductory Questions

- Can you tell me a little bit about yourself? (note – ensure important biographic information is included in the answer)
- When did you become a ringside medic?
- Do you have any prior experience in combat sport?

Main Questions

- Who are you hired by?
- What sort of injuries do you usually deal with during fight events?
- What is it like treating patients in the ring versus treating patients in the clinic?
- Could you tell me about your experiences with fighters during fight night?
    - Probe: recent, positive, negative
- Have you ever felt pressured by the fighter/coach/promoter/referee to make a medical decision?
    - Probe: who are the people of power
- Do you think that ringside medics should be of a specific medical profession?
- Do you believe having prior knowledge of the sport is required to be a ringside medic?

Summary Questions

- Are there any recommendations that would improve the quality of medical care provided to fighters?
- Is there anything else that you would like to add?

Thank you so much for participating in this interview.