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Soccer, CTE, and the cultural representation of dementia

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Soccer, CTE and the Cultural Representation of Dementia

Abstract

This article deploys a qualitative media content analysis to examine discourses linking sport, head injury and longer-term neurocognitive decline. It draws on a seminal British television documentary and associated print media coverage to demonstrate that the representation of sport-related brain injury is intricately connected to both conceptions of risk in sport and a wider social response to ageing and dementia. The article augments existing North American analyses to provide the first cross-cultural comparison of this phenomenon, and in so doing illustrates how the social prominence of cultural representations of sport-related brain injury relates in part to the distinct characteristics of the sport-related phenomenon which extend and amplify both the broader cultural crisis of concussion in sport and existing representations of dementia. The study is therefore important because it provides a unique perspective on both a key contemporary sporting issue, and this global health concern.

Keywords: concussion, CTE, dementia, media, risk, soccer

Introduction

On 12 November 2017, the United Kingdom (UK) premiere of *Dementia, Football and Me* (DFME) was broadcast on British television. The program was presented by Alan Shearer, a former soccer player renowned for his ability to head the ball, the English Premier League's all-time record goal scorer, and now a television commentator. Combining testimony from former players and their families, neuroscientists and sports administrators, Shearer's quest

was to explore the evidence for a link between soccer - i.e. football in the UK - and dementia - specifically Chronic Traumatic Encephalopathy (CTE) - and assess whether soccer's rules should be altered to protect players from longer-term neurodegenerative conditions.

DFME received praise from sports writers, former players, and television critics who described Shearer as “admirably impassioned” (Hogan, 2017) and “open-minded” (Wollaston, 2017). Shearer was commended for “overcoming reluctance, fear and a general preference for turning a blind eye” (Smith, 2017), and producing “the kind of testimony which should leave those in power determined to turn every stone” (Herbert, 2017a). Within two weeks of broadcast the Football Association (FA) and Professional Footballers’ Association (PFA) launched the FIELD study, designed to compare the incidence of neurodegenerative conditions amongst ex-professional players relative to the wider population. Two years later the study reported that former players were three times more likely to have neurodegenerative disease cited as a primary or contributory cause of death (Mackay et al., 2019). In early 2020, UK soccer associations banned heading in training for under-12s. *DFME* was therefore a landmark in debates about sport-related brain injury in the UK.

DFME should be understood as part of the cultural crisis around concussion in which a growing number of sports across the globe have become subject to existential and axiological debates about the impact of sport practices on brain health (Malcolm, 2020; see also Caron & Bloom, 2019; Ventresca & McDonald, 2020). Historically concussion has been considered a relatively trivial injury although increasing concerns within the medical and sporting community were evident at the turn of the twenty-first century (Liston & Malcolm, 2019). Indicatively the first Concussion in Sport Group “position statement” was published in early 2002. This identified a range of cognitive features (e.g. confusion, amnesia), typical symptoms (e.g. headache, dizziness, nausea, balance impairment), and physical signs

(impaired conscious state, poor coordination) associated with concussion, and stated that concussion “typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously” (Aubrey et al., 2002, p.6).

However, when retired National Football League (NFL) star Mike Webster died in September 2002, pathologist Bennet Omalu’s undertook a detailed post-mortem investigation and subsequently (in 2005) published a case study report arguing that Webster’s brain showed a distinct pattern of tau protein which was described as CTE. John Corsellis rather than Omalu first identified CTE through brain autopsies on boxers (Liston & Malcolm, 2019) and, prior to Omalu’s work, McCrory (2001) had noted that CTE had “been documented in other sports, such as American Football” (p.2). However, through this research Omalu demonstrated that what had long been believed about the neurodegenerative harms experienced by boxers could potentially apply to a wider sporting population. In subsequent studies Omalu found evidence of CTE in those retired from elite wrestling and ice-hockey. From these pathological studies emerged an associated symptomology said to include, “memory difficulties, aggression, depression, explosivity, and executive dysfunction at the early stages progressing to problems with attention, mood swings, visuospatial difficulties, confusion, progressive dementia, and suicidality” (Gaetz, 2017, p.131).

Thus, Omalu’s work not only suggested that these were cross-sport concerns, but also that concussion injuries had both longer term and more severe consequences. Indicatively the Hollywood portrayal of Omalu’s work was (misleadingly) titled *Concussion* (Bell et al., 2019). However, they should not be seen as synonymous because the “dose-response” link between the number of concussions experienced and the manifestation of CTE is unclear, and some hypotheses suggest that CTE is also caused by subconcussive impacts (Gaetz, 2017). However, key outcomes of the identification of CTE were to “helped the diagnosis of concussion ... become more scientifically determinable” (Hardes, 2017, p. 284), and provide

an effective basis on which NFL concussion policies and practices have been legally and socially contested.

UK concerns about the link between ex-professional soccer players and neurodegenerative disease have become part of this crisis. The coroner presiding over the death of Jeff Astle - a former England international who like Webster died in 2002, aged in his 50s - decreed that Astle developed dementia due to the “repeated minor trauma” of heading soccer balls and thus his death resulted from “an industrial disease” (Slater, 2017). In light of a growing body of North American cases, in 2014 Astle’s brain was re-examined revealing the pathophysiologic features of CTE. A subsequent study diagnosed CTE in four unnamed soccer players (all of whom had previously been diagnosed with dementia) and concluded that they were “probably ... related to ... past prolonged exposure to repetitive subconcussive head impacts from heading and head-to-player collisions” (Ling et al., 2017, p.348). There has also been considerable media speculation about the neurocognitive health of members of England’s 1966 Football World Cup winning team, with three of nine surviving players reportedly diagnosed with dementia. However, concussion is relatively infrequent in soccer (compared, e.g., to American football), caused mainly through head-to-head and arm-to-head contact incurred when attempting to head the ball rather than intentional physical contact, and this has led to concerns focussing upon the potential implications of subconcussive impacts. While heading was prohibited for under 11s in United States (US) youth soccer, the rationale for this is to reduce concussions from player contact rather than the effects of heading per se. However, subsequent studies have revealed the moderate and transient effects of heading on brain function (Di Virgilio et al., 2016; Moore et al., 2017).¹

It should be noted that the link between sport participation, concussion/subconcussive impacts, and neurodegenerative conditions is fundamentally uncertain. The most compelling

evidence has been produced by the aforementioned FIELD study and the Boston University “brain bank” studies which diagnosed CTE in 110 out of 111 deceased NFL players (Mez et al., 2017). These studies do, however, have their critics. For instance, it should be noted that while the Boston researchers have acknowledged the inherent selection bias within studies of CTE, sampling methodologies have not changed (Gaetz, 2017). Further, it is argued that there is “no prospective scientific basis that can be used to support [the] link” between brain pathology and symptomology (Gaetz, 2017, p.140. Emphasis in original) and, indeed, that drawing such a link is fundamentally beyond the scope of these neuropathological studies (Castellani, 2015). Moreover, the hypothesis that this particular form of neurodegenerative dementia has a specific identifiable cause contrasts with the multifactorial aetiology associated with other cognitive and behavioral conditions (Gaetz, 2017). Finally, it should be noted that there are no established diagnostic criteria for CTE (Stewart et al. 2019) and, indicatively, Boston University researcher Ann McKee has argued that Ling et al.’s (2017) findings are based on incorrect diagnoses.²

In contrast, the retrospective cohort study used in the FIELD study (Mackay et al., 2019) could not be criticized for inherent selection bias. However, the researchers made more limited claims seeking only to identify the relative prevalence of dementia rather than CTE, making no reference to symptomology, and explicitly recognizing the need for these “observations ... to be confirmed in prospective matched-cohort studies” (p. 1801). That said, responses to Mackay et al.’s (2019) findings foregrounded the heightened incidence of dementia but largely ignored the finding that soccer players lived, on average, three years longer. It overlooked the similarity of dementia rates among outfield players and goalkeepers (who rarely head balls and thus confound the central hypothesis of causation). The point of highlighting these issues is not to disregard these important evidential developments but to illustrate that current advocacy and recent changes are based on precautionary principles

(Goldberg, 2020), and thus that critical researchers must remain open-minded to ensure this science does not turn into self-fulfilling prophecy.

This article deploys a qualitative content analysis focussing on *DFME* and related print media coverage to examine discourses linking sport, head injury and longer-term neurocognitive decline. It has three aims. Primarily it redefines our understanding of contemporary issues related to head injuries in sport by recognizing how they are framed within the broader cultural context of a predicted crisis stemming from dementia-related social change. In so doing it secondly answers Ventresca's (2019) call to expand media analyses of CTE to other sports and environments and provides the first cross-cultural comparison of dominant themes. Third, the analysis illustrates how these discourses feed back into cultural representations of dementia and thus uniquely shows how sport-specific issues have a broader significance for this global health concern. The study is therefore important because it provides an original perspective on both a key contemporary sporting issue, and perhaps the primary health concern of twenty-first century Western societies. To construct the theoretical framework, we first contextualize concerns about concussion and CTE within a broader paradigm of risk and injury, and explore existing sociological analyses of the impact of an ageing population with an increasing incidence of dementia.

Risk, Concussion, and CTE

So deeply interdependent are sport and risk that "sport culture is ... by definition, a deliberately staged risk culture" (Atkinson, 2019, p.9). Sport participation entails a wide range of physical, social, emotional, identity and existential risks, and in what Atkinson (2019) terms the "golden age" of research on the culture of risk (p.6), a number of key concepts emerged, namely: the pain principle, or the patriarchy-based belief that pain is both

an inevitable experience and character building (for men) (Sabo, 1989); the sport ethic, referring to a set of norms encouraging the single-minded pursuit of sporting success in which potential obstacles and risks (including injury) are disregarded (Hughes and Coakley, 1991); and sportsnets, or the communication networks that normalize playing hurt and so mask the risks of athletic participation (Nixon, 1992). These ideas dovetailed with concurrent theoretical developments focussing on the emergence of a “risk society” in which people are “increasingly preoccupied with the future (and also with safety), which generates a notion of risk” (Giddens, 1991; cited in Atkinson, 2019, p.8).

The notion of risk culture is of fundamental importance to our understanding of sport, concussion, and dementia. Much of the existing research has focussed on the media representation of SRCs which sometimes incorporates a defence of sport’s traditional place in constructing masculinity (Cassilo & Sanderson, 2018), while at others validates more health precautionary behaviors (McGannon et al., 2013). It is argued, for instance, that concerns over head injury have led to a softening of American sporting masculinity (Anderson and Kian, 2012). Studies have further highlighted the conflict between the organizational and individual responsibilities for and responses to risk (Benson, 2017; Furness, 2016). Furness (2016) draws attention to the sport media’s reproduction of hegemonic masculine attitudes and illustrates how the influential PBS documentary, *League of Denial*, actively contests the media’s rationalization of concussions by juxtaposing the prominence of former players who deploy biographical reflections to create an “informed soldier trope” with video footage of the declining mental faculties of (other) former players. Others note how risk is frequently “externalized” as inevitable, inherent to the game, and thus beyond the realm of institutional responsibility, while the theme of “cultural loss” is evoked as part of the resistance to change (Cranmer & Sanderson, 2018). Instead, the propensity to depoliticize athlete issues redirects responsibility for these risks away from the relations of production to the risk choices of

individual athletes (Brayton et al., 2017). While SRC media discourse has challenged the historically held social disregard for sport injuries, generated a stronger social awareness of risk culture in sport (Atkinson, 2019), and mobilized telling public campaigns (Malcolm, 2020), these have almost universally focussed solely on brain injuries.

Sport, concussion and dementia also combine in unique ways to advance our understanding of risk culture in sport. This, in part, stems from the fundamental uncertainty over CTE (noted above), embracing the diagnosis, incidence, causation, and particular populations impacted (Stewart et al., 2019). This uncertainty is similarly experienced by clinicians in relation to the diagnosis and management of SRCs (Malcolm, 2009; 2019). Studies of the lived experience of concussion have highlighted a particularly diverse range of health outcomes for which there is currently no clear explanation. For example, in contrast to Liston et al. (2018) who highlight the degree of irreverence **Irish** amateur rugby players expressed towards brain injuries, Dean's (2019) autoethnographic account of concussion-induced retirement from lacrosse charts aspects of anxiety, depression, alcohol abuse, weight gain and the related impact on social status and student-athlete identity (see also Cassilo & Sanderson, 2019; **Bridel et al. 2020**). **The study of sport, concussion and dementia therefore highlights both longer term, existential considerations of risk, and the cultural specificity of athlete responses to particular injuries.**

Some studies have begun to position SRC and CTE relative to biomedical interventions and perceptions of risk. Malcolm (2017), for instance, argues that media coverage of the concussion crisis tends to exaggerate the potential of biomedicine to resolve both individual experiences and broader public concerns. Hardes (2017) argues that neuroscience in general, and legal cases against the NFL in particular, are structured by an “anticipatory discourse” in which acts of governance depend not on what currently exists but “on the future promise of diagnostics” (p.286). Finally, Ventresca (2019) argues that media

discourses create multiple “becomings” of CTE, i.e. as medical diagnosis, object of scientific study, cultural phenomenon and lived experience. Emotive personal stories create perceptions of risk that fuel beliefs that CTE represents an urgent public health issue, while reports of scientific uncertainty are used to suggest that the risks are not sufficient to necessitate challenges to the relatively violent elements of sport. Evaluations of biomedical risk have led to crucial, if somewhat contradictory, influences on sport’s concussion crisis; a crisis in which dementia has increasingly become implicated (Malcolm, 2020).

The Sociology of Dementia

Dementia is an umbrella term for progressive brain conditions, the symptoms of which affect memory, cognitive ability (concentration, decision-making, reasoning), and communication (Dementia UK, 2019). Biomedical research has identified an increasing variety of dementias - the most common of which are Alzheimer’s disease and vascular dementia - as well as the occurrence of combined or mixed dementias. Experiences of dementia tend to be quite distinct to each individual, but it is estimated that dementia will affect 80 million people globally by 2040, costing approximately \$1trillion per year by 2030 (Higgs & Gilleard, 2017).

The cause or causes of dementia are unknown but age is overwhelmingly the primary biomedical risk factor (Higgs & Gilleard, 2017). Lifestyle modifications (cognitive stimulation but primarily promoting flow of oxygen to the brain through enhanced cardiovascular health) are thought to help delay or prevent the onset of dementia, but existing treatments can only slow the development of certain conditions, and some pharmaceutical companies have withdrawn from the field due to the persistent failure of drug trials. The combination of population prevalence and medical impotence leads to the perception of

dementia “as a social, economic and health burden on society” (Thomas & Milligan, 2015, p.14). Dementia has become a “cultural preoccupation;” “one of, if not the most feared aspects of growing old” (Hillman & Latimer, 2017, p.1).

Dementia, like all medical conditions, is a socially mediated biophysical development. Following Elias’ (1987) conceptualization of the hinge, the physical or material reality of the human body must be understood as entwined with social and cultural processes. Bodies are not simply mediators of physiological experience, but biologically significant sources of meaning and practice (Gibson & Malcolm, 2019). Conversely, illness experiences are not free-floating but shaped by both broader social structural factors and embodied experience (Malcolm et al., 2017). Indicatively, the different attitudinal and behavioral responses to SRC described above relate to both sport’s risk culture, and the particularly diverse domains and severity of symptoms which these injuries can entail. Thus, while cognizant of pathological manifestation and embodied experience, it is important to recognize three particular facets of the social mediation of dementia.

First, the medicalization of dementia through definition and labelling problematizes what was previously considered a “normal” part of the ageing process – e.g. memory loss - and constructs a singular conceptualization of a “natural” order (Davis, 2004, p. 370). This process “disables” those who depart from that norm and may negatively impact on self-esteem, confidence, etc. (Thomas & Milligan, 2015). This, in turn, evokes particular social and ethical ramifications of communicating a diagnosis or risk of future contraction (Milne et al., 2018). The impact of diagnosis and the evaluation of risk are shaped by cultural context.

Second, individual diagnoses of dementia are further shaped by social factors. Diagnosis depends on the means and motives of lay people to present certain conditions to clinical personnel and these, in turn, are contoured by broader social determinants of health.

Research has so far been equivocal about the relationship between factors such as income, education and comorbidities upon the incidence and onset of dementia (Jones, 2017), but gender differences are striking. Dementia (in the UK) is diagnosed in almost twice as many women as men although men outnumber women in younger (i.e. early onset) age groups (Alzheimer's Society, 2014). A person's class, gender, ethnicity, etc. influence how dementia (indeed all illnesses) is conceptualized, experienced, presented and negotiated (Jones, 2017).

Third, cultural awareness of health/ill-health is developed via media representation. While often neglected by a largely youth-oriented media, (the limited) coverage of the elderly tends to depict ageing negatively; as a burden, caused by frail non-contributors, with unsustainable health and social care costs, creating a demographic "time bomb" (Martin et al., 2009). Consequently, Euro-American cultures have seen the "proliferation of dementia stories" (Hillman & Latimer, 2017, p.2), **which present** frightening images of a brain-wasting disease which entails a kind of living or "social death" (Higgs & Gilleard, 2017). Peel (2014) further describes a panic-blame discourse in which the most extreme cases of dementia (in terms of both incapacity and early onset), and discrete or singular "causes," are foregrounded. Descriptors evoke a sense of maliciousness, while frequently deployed terms such as "tsunami" and "epidemic" depict the scale of dementia and society's sense of helplessness.

There are four main consequences of this relationship between dementia as a biophysical condition and its social mediation. First, the "Alzheimerisation of old age" (Higgs & Gilleard, 2017, p.178) increases public anxiety and (further) stigmatizes elderly populations. Second, the relative success in repositioning dementia as a medical condition rather than a normative ageing process produces the prospect of a cure for conditions which are "neither new, contagious nor straightforwardly preventable" (Peel, 2014, p.891). This **repositioning** serves to reduce the sense of risk, giving younger people the (currently false) hope that they can be saved from the apocalyptic future depicted. Third, the failure of the

pharmaceutical industry to produce a “cure” has led to an emphasis on “pre-clinical” risk profiling and “dementia prevention” strategies (Higgs & Gilleard, 2017, p.176). This focus on prevention strategies serves, fourthly, to individualize the potential causes and management of the condition and is thus “a logical extension of broader ... discourses of self-responsibility for health and wellbeing” (Peel, 2014, p.887). Dementia, therefore, is bound up with, and extends, neoliberal conceptualizations of health; i.e., the social norms that encourage us all to maintain vigilance against, and accept responsibility for, markers of (poor) health. Again, we see how risk is a cultural preoccupation.

Method

The research project developed from watching *DFME* and subsequently searching bibliographic databases to develop a preliminary literature review. In order to establish the wider social impact of the program a largely qualitative content analysis of print media was undertaken (Altheide, 1996). Qualitative media analysis relies significantly on the researcher’s reading of “texts” to identify discursive strategies, patterns and underlying meanings, hence the significance of the preliminary literature review. This method was chosen because it: a) provided a common approach through which to analyse both the audio-visual and print materials; b) is suitable for assessing the cultural processes that interact with the material reality of dementia; and c) has previously been used in studies related to this topic (e.g. Cassilo and Sanderson, 2019; McGannon et al., 2013). Central research questions included enquiring how the narratives presented related to: ideas about the culture of risk in sport; existing studies of media representations of concussion and CTE; and existing sociological analyses of dementia.

The Nexis database was utilized to access print media content. The inclusion criteria for the sample was any daily newspaper distributed nationally within the UK (i.e. *The Times*,

Independent, Daily Telegraph, Guardian, Daily Mail, Daily Express, Sun, Daily Mirror and *Daily Star*) including their Sunday and online equivalents. Consequently local and regional publications were excluded. A text search across all sections of these newspapers identified articles with the terms “dementia” and “football” appearing in their headline or first paragraph. The initial search took place two weeks after the documentary was first broadcast and extended back a calendar year. This identified 260 articles in total. An exploratory analysis of the temporal distribution of reports illustrated how significant the documentary had been in shifting the broader dementia-soccer narrative, with almost one third of the year’s total coverage condensed into the week before and two weeks following initial broadcast. Consequently, it was decided to focus the study on the 34 (26 after removing duplicates) articles published between November 6 and 12 and the 46 (38) published from November 13 to 26, 2017. While articles were published across a range of newspapers, three with pre-existing SRC campaigns – the *Telegraph*, *Mail*, and *Mirror* – featured heavily. However, these titles have diverse readerships, being a right-wing broadsheet, and right- and left-wing tabloids respectively and are thus broadly representative of the spectrum of UK national press.

The data - both the audio-visual content of *DFME* and the extracted newspaper text – were analysed through a series of creative and reflective engagements. These engagements were neither exclusively inductive nor deductive. During viewings of *DFME*, notes were taken and progressively enhanced, identifying passages of speech and themes in the documentary which resonated with the broader literature. The textual analysis included words, phrases, contextualizing examples, and references to named individuals. The use of rhetorical techniques like metaphors and descriptors was noted in order to capture the discursive strategies employed. Multiple readings and viewings were undertaken, some in an attempt to remain open-minded to alternative interpretations and identify aspects previously

overlooked, others as part of a process of reflecting on the assumptions that had been made in interpreting that data. Notes from the audio-visual and textual sources were then synthesized into a coding sheet, and indicative examples were associated with the iterative themes (using time codes for *DFME* and the identification numbers Nexis generates to order search results). The analysis developed through the process of writing up and revising for publication.

In what follows, a synthesis of ideas about sport-related brain-injury, risk culture in sport, and the social mediation of dementia informs the analysis of the narrative in, and evoked by, *DFME*. The article argues that the cultural representation of sport-related brain injury extends and amplifies existing dementia narratives, which in turn, contributes to the popular cultural interest in the incidence of concussion and CTE, and thus fuels the broader cultural crisis of concussion in sport.

Risk, Responsibility and Resistance to Change

Prominent within the data were a number of themes previously identified in sports injury research, and subsequently in relation to concussion and CTE. Specifically, these were notions of the institutional culpability of sportsnets, the prevailing culture of risk in sport, and the mobilization of “cultural loss” to resist change.

DFME included interviews with representatives of the FA and PFA, and Shearer was unequivocal that blame was attributable: “there are a lot of angry people out there and rightly so. The surprising thing is no one has stood up and said, ‘we messed up, we should have done more’.” The print media picked up on this theme, highlighting the “brick wall” encountered by Shearer, the failure of the FA to explain the absence of any exploratory research, and the PFA’s “dereliction of duty” in “not even undertak[ing] a cursory study of those affected ... the minimum requirement” (Herbert, 2017a). There were calls for officials to be cross-

examined by a UK parliamentary committee (Herbert, 2017b) much as Congressional inquiries had scrutinized National Football League (NFL) officials (Hardes, 2017). Consequently this coverage appeared to be influenced by trans-Atlantic events, and the critiques **highlighting the organizational responsibilities** of the NFL in particular (Furness, 2016), for although soccer administrators were not alleged to have actively sought to suppress unfavorable research findings and/or silence and discredit opponents, they were accused of having swept the issue “under the carpet” (Wilson, 2017), and creating a “silent scandal” (Rumsby, 2017). The claim that “players have died” (Manger, 2017) as a consequence the soccer authorities being “in denial” (Anon, 2017a) was more closely aligned to the initial critiques of the NFL (Fainaru-Wada and Fainaru, 2013) than the depoliticization of rhetoric that has subsequently been evident (Brayton et al. 2017). In the UK, sportsnets (Nixon, 1992) were deemed accountable for participants’ risk of brain injury.

Despite this, the normalization of risk in soccer was central to *DFME* and associated press coverage. Investigator and presenter Shearer provided what Furness (2016) describes as an “informed soldier” account (an authority derived from personal experience of living within this high-risk culture). Shearer stated his credentials - “I was a fairly robust player who took a few knocks and gave a few” - and *DFME* reinforced this message with images of him playing with blood-soaked bandages. Shearer listed his extensive medical history (including operations on two tendons, an **anterior cruciate ligament injury**, hernias, fractured and dislocated ankles), and joked about a piece of metal left embedded in his head from previous injury. He normalized these experiences, stating, “I went into football knowing that by the age of 35 or 40 I’d have dodgy knees and a dodgy back.” Other ex-players, either featured in *DFME* or quoted in the print media, were similarly known for their physical playing style. These included John Terry (in *DFME*) and Mick Harford (in newspapers), “famed for his courage and aerial power ... ‘I used to head hundreds of balls a day – I loved it ... never

shirked a challenge’” (Barlow, 2017). But as with other representations of concussion and risk culture in sport, head injury was positioned in contradistinction to other sports injuries. Shearer, for instance, contrasted his expectations about post-career musculoskeletal injury in saying, “But you don’t expect problems with your brain. I never thought there could be a consequence to heading the ball.” Brain injury was positioned as beyond the boundaries of *accepted* and *expected* health conditions within soccer’s risk culture. Because the embodied experience of concussion and sub-concussive impacts is (and is perceived to be) relatively pain-free (Dean, 2019; Liston et al. 2018), there is no masculinity-validating “pain principle” (Sabo, 1989) to legitimate tolerance.

These somewhat contradictory themes converged in the sense of “cultural loss” invoked to resist potential rule changes (Cranmer & Sanderson, 2018, p.641). Whereas the biomedical researchers in the film advocated a more precautionary approach, not a single *sportsperson* featured in *DFME* or the print media agreed with the call to prohibit heading in the adult game. Like defendants of the NFL who claim that without helmets “it wouldn’t be football” (Benson, 2017, p.312), those writing in the British press suggested that “football would change dramatically if heading were outlawed” (Crouch, 2017), and even be the “worst case scenario” (Delaney, 2017). Current and former players evoked the “sport ethic” to defend the existing culture of risk, and called for more evidence and/or coaching reforms before rule changes were implemented. Shearer himself called for further research so that players could “make an educated choice.” Such was the potential social risk of “cultural loss” that even the children of ex-professional players, who expressed *certainty* that heading had caused their fathers’ dementia, argued only that *children* should be protected from the physical risks of heading.

The Role of Dementia Narratives

While *DFME* replicated narratives evident in broader discussions of risk and injury in sport, equally they should be located as part of the social development of dementia representations (Hillman & Latimer, 2017). Specifically, the coverage reproduced themes identified in the literature review: atypical tales of dementia and a panic-blame discourse which generates public anxieties; and the (misleading) projection of the prospect of cure and the (paradoxical) foregrounding of dementia prevention strategies and pre-clinical risk profiling. While these themes fundamentally converged around notions of risk and its management through an “anticipatory discourse” (Hardes, 2017), it culminated in reproducing neoliberal ideas about the primacy of individual responsibility for determining health outcomes.

Personal Experience and Public Anxiety

The use of the word ‘me’ in the film title signalled how dementia was portrayed as an highly personalized condition. Understandably, *DFME* highlighted the most well-known cases, including interviews with the children of former players. Dawn Astle described her father Jeff’s condition as “the most devastating, brutal thing I’ve ever seen in my life. It used to kill me to go and see him.” After their meeting Shearer reflected that, “only now do I realise that Dawn and her family have been through sheer hell.” John Stiles, son of 1966 World Cup winner Nobby, conveyed the potential economic burden (Thomas & Milligan, 2015), claiming that “most” families of former players with dementia “have had to sell their houses.” Dawn Astle and John Stiles both represented dementia as a condition which gradually erodes the essential qualities of being human (Hillman & Latimer, 2017). For instance, Dawn noted that “he looked like Dad” in the early years post-diagnosis but “he looked 159 when he died,” while John spoke of his dad “just disappearing.” The print media

replicated this focus and tone. Half of all articles named Jeff Astle, and approximately one-third mentioned England's 1966 World Cup winning team. Dawn Astle was reported to have been "quite teary" when she thanked the media: "it's been very lonely a lot of the time and it's pure frustration at times when you know ... that football killed him [Dad] and football just didn't want to know" (Matthews, 2017).

These narratives also complied with contemporary representations of dementia in which essentially atypical examples dominate (Peel, 2014). For instance, age of onset was only ever specified in cases of relatively early disease manifestation. Thus, *DFME* reported that Jeff Astle was about 55 years old when his family first became concerned that he was exhibiting symptoms. Similarly, the *Sunday Telegraph* reported the case of Archie Moss who, "suffering with suspected CTE since his late fifties can now no longer speak or complete routine tasks" (Wilson, 2017). Conversely, neither the film nor print media gave the ages at diagnosis for any of the older players featured (e.g. Nobby Stiles and Matt Tees were 75 and 78 respectively when *DFME* was broadcast). Indicatively, just 5% of all dementia cases are diagnosed before the age of 65, and those under 65 with severe manifestations (as Astle appeared to be) account for just 0.25% of cases across the UK (Alzheimer's Society, 2014).

Because the atypicality of these personal illustrations was never acknowledged, they could be extrapolated to depict an 'apocalyptic demography' (Martin et al., 2009). Thus Shearer would make the unfounded (and therefore alarmist) claim that, "footballers seem particularly prone to early-onset dementia ... CTE stalks us." He further speculated that "there are 850,000 people in our country that are suffering from dementia, and there are a lot of footballers who are in those numbers," and implied blame saying, "But ... we don't know how many, and that can't be right." A sense that the true incidence of soccer related-dementia was hidden from public view followed from previous accounts of organizational denial, and

was further implied by *DFME*'s reporting that Matt Tees wife's knew eight of her husband's contemporaries who had dementia. Similar projections of incidence were relayed in the press, the highest being the claim attributed to Dawn Astle that "most of the 500 families who called [the *Jeff Astle Foundation*] described four or five teammates of the affected player having the same problem" (Herbert, 2017c). In contrast to the implication that thousands were affected, this media coverage named just eighteen former players with or suspected of having dementia, yet invoking the terminology more generally deployed in the cultural representation of dementia, the print media claimed that the game was experiencing a "dementia epidemic" (McNally, 2017a). As Ventresca (2019) notes, while medical uncertainty is used to resist rather than support calls for social change, emotive stories of the personal, lived experience fuel the perception that a public health crisis has emerged.

The propensity for this panic-blame narrative to create social anxieties (Peel, 2014) was evidenced in the self-diagnostic tendencies of former players. Shearer, for example, claimed to "fit the profile" and underwent various tests (see below). The print media quoted a number of other recently retired players with similar concerns. Steve Bruce stated that, "when I think about it I reckon I should get myself checked out. I feel just fine but we all have to take the issue seriously" (Anon, 2017b). Peter Crouch (2017), reported that he would "be having a scan very soon ... I'd be lying if I said I wasn't worried about the effect that heading a ball might have later in life." The accounts illustrate how the material reality of physiological experiences, which *could* be precursors of CTE but which could also be part of the normal ageing process, is understood in line with dominant media representations. While we do not know if the well-publicised cases of US athlete suicides linked to CTE (e.g. Dave Duerson) are attributable to the condition or a self-fulfilling prophecy of its cultural representation (Ventresca, 2019), athletes' reactions are typical of broader cultural concerns.

For instance, Milne et al. (2018, p.13) report that 11.6% of US respondents said they would “seriously consider suicide” if found to have a high risk of contracting Alzheimer’s.

But perhaps the most significant case of self-diagnosis – because it inter-connects with other salient themes – was Shearer’s interview with his former coach Chris Nicholl. Shearer greeted Nicholl by saying “you haven’t changed a bit.” Nicholl later stated that, “I’m brain damaged from heading balls,” and described experiences of memory loss which he categorized as either “normal” (losing car keys) or “not normal” (forgetting where he lived). He reported a progressive worsening over 4-5 years but that he had not seen a doctor because, “I wouldn’t change anything anyway.” Shearer urged him to “stop being big and brave and bravado.” This exchange therefore contained examples of the perceived invisibility of dementia and thus a form of “living death” (Davis, 2004), the potential stigma associated with dementia (Thomas & Milligan, 2015), and how social factors (like gender) impact on diagnosis and recorded incidence (Jones, 2017). It also highlights how the normalization of risk in sport combines with concerns about cultural loss to suppress calls for change.

Dementia: treatment, prevention and neoliberalism

In the above exchange, Shearer suggested that it “would be a huge advantage” to Nicholl to seek medical help. This was indicative of the broader modernist conception of the efficacy of medicine underpinning *DFME* and indeed the representation of dementia more broadly (Davis, 2004). While in reality the biomedical community currently has relatively little to offer dementia patients, a fundamental part of the broader narrative was the concern that the FA had effectively held medical science back from investigating (and so resolving) these issues. For instance, Dawn Astle described sixteen wasted years since her father’s death (McNally, 2017b) and Shearer contrasted the lack of research funding with the wealth in the

contemporary game, arguing that, “it’s about time that we had more definitive answers.” Journalists noted that calls for further research dated back to 1995 when a medical journal editor notified the FA of her concerns, and received a response that was “very short and refuted any such association could exist” (Matthews, 2017). As with the legal proceedings against the NFL, it was assumed that neuroscience would ultimately provide the evidence that is currently lacking to prove the link between sport and dementia or CTE (Hardes, 2017). The absence of “cure” was attributed to organizational failings rather than biomedical limitations; contemporary risks (it is assumed) will be scientifically resolved.

Illustrating this faith in medical efficacy, Shearer visited university researchers, “to see if science has the answer.” He undertook experiments to see how a heading practice would influence his performance in cognitive, balance, and electronic brain stimulation tests. He had magnetic resonance imaging (MRI) and spectroscopy scans. Predictably for an asymptomatic individual, Shearer’s tests returned “normal” results (MRI scans may identify some forms of dementia but cannot detect CTE), but subjecting himself to the use of these medical technologies (rather than the essentially more human and more commonly used diagnostic assessments), portrayed an exaggerated sense of the potential of medical science to help us shape the individual experience of dementia (Malcolm, 2017). Contrary to media representations, relatively extensive medical investigation has produced few if any significant scientific breakthroughs in relation to the treatment of either concussion or dementia or CTE (Malcolm, 2020).

Despite such apparent faith in biomedical progress, *DFME* and subsequent press reports followed broader dementia discourses in focussing on prevention strategies (Thomas & Milligan, 2017). Specifically, while biomedical scientists interviewed in the film did note the inconclusiveness of current evidence, *DFME* questioned whether children were more “prone” to concussion than adults. In part this reflected a broader emphasis on youth in

sport's concussion crisis which in turn is predicated on a certain ideology of childhood (Malcolm, 2020), but in this context it was important in shifting emphasis away from existing evidence of incidence to projections over a potential "time bomb" (Peel, 2014). For example, Dawn Astle highlighted the centrality of youth risk arguing that, "it's not just about the past now, it's about football's future; we've got to protect kids into the game." The tendency to explore pre-clinical risk profiling (Higgs & Gilleard, 2017) similarly explains the documentary's heightened interest in whether girls are more "prone" to concussion than boys. This is a problematic assertion given that it is widely suggested that male athletes "under-report" concussion (Malcolm, 2020), but it is one that draws on existing trends in concussion research which, while frequently driven by concerns to highlight a neglect of female incidence, effectively reasserts ideologies of biological difference and female frailty (Henne, 2020). However, in this context, concern about concussion injuries in young females propagated the idea that the game's changing participant profile was creating a potentially new and thus heightened population risk. In a program nominally exploring neurocognitive decline among an occupationally specific group of ageing men, there was a disproportionate focus on children and especially girls who played the game recreationally. While the narrative of soccer and dementia therefore replicates the theme of impending social implosion seen in other portrayals of ageing (Martin et al., 2009), in this instance contemporary concerns for the elderly were displaced by risk evaluations of youth practices.

Finally, *DFME*'s reliance on existing dementia narratives was evident in the degree to which neoliberal health ideologies were presented (Peel, 2014). An emphasis on the role of individual decision-making in determining health is more generally evident in the media's reporting of dementia-related lifestyle factors (again, despite inconclusive evidence of the scale of their efficacy). However, the central focus of *DFME* on a leisure activity (playing soccer), and one particular aspect of the activity (heading), spoke directly to this narrative

linking personal choice and the cause of ill-health. Indicatively, Chris Nicholl stated that “even knowing that it does damage your brain I would not change a thing, would not change a thing, because it was my job.” Furthermore, the stance taken in *DFME* in relation to heading (that it should continue until greater evidence of associated harm emerged) provided a variant of the “externalization of risk” seen elsewhere in debates about sport, concussion and CTE (Cranmer & Sanderson, 2018), in that while risk was not necessarily seen as inherent to the game, risk responsibility was explicitly displaced from the organizational - the “sportsnet” - onto individual players or parents. Shearer’s defence of the status quo on the grounds that he did not want to deprive people of the joy of playing soccer, further emphasized personal choice over structural solutions (note that themes of individual culpability are also evident in North American representations, e.g. Brayton et al., 2019). However, the *DFME* interviews with Matt Tees’ grandchildren provided the most explicit example of this narrative. When Shearer asked if they were concerned about heading, one immediately said “no” and a second said “erm, I don’t really think about it ... I wouldn’t stop doing it.” After the interview Shearer reflected,

it surprises me that *they’re so keen* and wanting and willing to head balls despite seeing their grandad and the way he is and what their grandma has to deal with ... Are Matt’s grandchildren *putting themselves* in harm’s way by heading the ball? (emphasis added)

DFME therefore deployed techniques that exaggerated severity and incidence, and focussed on scientifically unverified prevention strategies. It also replicated what Peel (2014, p. 897) describes as “a worrying foregrounding of the cultural representation of the causes of dementias as preventable (as opposed to unknown and unpreventable) through lifestyle and behavioral modifications that do not operate at a public health level,” and replicated neoliberal ideologies of health self-responsibility. It fuelled faith in the efficacy of biomedical

science yet questioned the actions of those children who exhibited such faith. It provided a contradictory narrative to the sense of organizational failure discussed earlier.

How Sport Extends the Cultural Preoccupation with Dementia

While *DFME* and related media coverage drew on existing understandings of both dementia and risk culture in sport, the synthesis of sport and dementia provides three distinct dynamics to the wider cultural preoccupation with neurodegenerative illness (Hillman & Latimer, 2017).

First, the gendered demography of UK soccer (disproportionately young males) is almost polar opposite to the incidence of dementia (largely older females). By exploring dementia in relation to sport, media representations come to highlight the potential impact of these conditions on a far broader demographic. Indeed, given that women appear (from data on formal diagnosis) to be at greater risk of developing dementia, it is remarkable that so few sportswomen have publicly featured as being diagnosed with dementia (Pat Summit being a notable exception). The relative incidence of dementia amongst males and females was never explicitly mentioned in *DFME* or newspaper coverage; this would have disrupted the overriding trope. Indeed, given the age and gender of those currently diagnosed with dementia, it seems unlikely that heading soccer balls is a particularly significant cause of dementia within the wider population. At the very least it highlights the limitations of the hypothesis of a specific identifiable cause rather than a multifactorial aetiology (Gaetz, 2017). However, through sport, dementia narratives come to have greater resonance for young males who would otherwise likely be relatively disinterested in this health concern.

Second, the hypothesis of sport-induced dementia conveys an indiscriminate and universal impact of these conditions, potentially affecting even those perceived to be the most

resilient members of society. As previously noted, Shearer's account combined elements of risk normalization and dominant notions of masculinity but in ways which neither evoked a defence of sporting traditions (Cassilo & Sanderson, 2018) nor encouraged a softening of masculinity (Anderson & Kian, 2012). Indicatively, *DFME* reported that Jeff Astle was nicknamed "the King," and showed the stadium gates erected in his honor and displaying the motif of a crown containing his shirt number (# 9). But more than simply drawing upon a cultural stereotype of soccer and masculinity, the focus on such individuals enabled the evocation of a nationalistic and nostalgic association of sport and masculinity. Shearer was said to represent, "the glorious spectacle of a good old-fashioned No 9 rising to head in a goal ... 100 years of British grit powered that strong neck ... A Shearer header was the ultimate expression of British football" (Tyers, 2017). Popular cultural references back to the 1966 World Cup winning team represent a focal point for notions of white English masculinity and thus partly explain the media's interest in reporting these players' experiences. By showing the effects of dementia on this specific occupational cohort, a narrative emerges which suggests that even masculine sporting heroes contract dementia and thus that dementia poses a health risk to everyone. This has broader cultural resonance because it has the effect of universalizing existing concerns over dementia, (re-)creating a "risk society" (Giddens, 1991).

Third, this representation feeds back into social anxieties by suggesting that lifestyles designed to counter the health risks of old age actually present not just one but *the only* "known" cause of dementia. Indeed, perhaps the most significant aspect of these cases is that whereas other dementia-related lifestyle medicine choices that have been identified are either intuitively or demonstrably harmful to health (e.g. tobacco/alcohol avoidance), sport is more broadly seen as fundamental to contemporary neoliberal conceptions of healthy citizenship. Thus *DFME* asked "Could CTE be caused by something as painless as heading?" and its

introduction concluded with Shearer paradoxically positing, “could the beautiful game be dangerous?” Not only is physical activity synonymous with good health, but images of older people participating in exercise and sports has become a primary media strategy for depicting a “living well” representation of ageing that is juxtaposed against the “tragedy discourse” of dementia (McParland et al., 2017). Research also shows that exercise features prominently in the strategies people consider deploying to reduce the risk of developing dementia (Milne et al., 2018).

Conclusion

DFME represented a seminal moment in social concerns about sport, concussion and dementia in the UK, triggering the launch of the aforementioned FIELD study, the subsequent restriction on heading in youth soccer, and leading to one further named individual diagnosis of CTE (Rod Taylor). Analysis of this documentary and associated press coverage shows how discussions of SRC and CTE are informed by sport-specific themes well-documented in the existing sociology of sport literature, namely: the culture of risk; the institutional culpability of sportsnets; and invoking cultural loss as resistance to change. However, this article is the first to illustrate the significance of broader health narratives relating to ageing populations and dementia in shaping debates around sport and the brain. Additionally, we have seen the potentially unique role that sport-related cases may play in propagating and extending cultural fears about dementia and thus “risk society.” Exposure of these particular cases not only broadens the audience for dementia stories, but problematizes previously held beliefs about the resilience of certain populations (with certain lifestyles), and socially pervasive ideas about the common-sense link between sport/exercise and current and longer-term good health.

The fact that concerns about concussion and CTE have uniquely generated a stronger social awareness of risk culture and sport (Atkinson, 2019) suggests that there is something qualitatively distinct about perceptions of brain injury. In part this relates to variability in the forces required to cause injury, the variety of symptoms manifest, and the unpredictable recovery trajectory. It relates also to the degree to which biomedical research has not (yet) produced significant solutions to the problems experienced. Each of these uncertainties creates unique and more complex risk assessments but are, in themselves, compounded by the fear that brain injuries may ultimately and cumulatively lead to dementia. A key implication of this argument is the need to place current and often rather sport-specific issues in broader cultural context. Equally, this article calls for a broader understanding of the interplay of the material reality and embodied experience – the pathology and sociocultural context - which will be essential to addressing the concussion crisis in sport.

But while sport is suggested to be a contributor to the global health priority of dementia, the dynamics of identifying heading as a potential cause contributes to the existing array of “faddy avoidance tactics” (Peel, 2014) in distinct ways. It provides an aetiology which is both reductive and intuitively seductive. It suggests that one of the most challenging global health problems, widely believed to be caused by a complex combination of factors, is singularly caused by impacts to the head. Moreover, this one identified cause essentially runs counter to common-sense notions of health. Here exercise is not medicine, but the antithesis of medicine. Consequently, the epidemic narrative conveying the broader sense of population risk is uniquely extended. These cases ultimately imply that even healthy lifestyles are contributing to society’s growing dementia “burden.” The apparent omnipresence of risk fuels a new “health politics of anguish” around dementia (Davis, 2004, p. 371) and one’s civic duty to self-manage health risks (Peel, 2014).

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Notes

¹ Those who defend the status quo argue that it is safer to be trained to effectively head the ball and thus that the earlier this is taught the less likely players are to experience brain injuries.

² Speaking at 4th Annual Chronic Traumatic Encephalopathy Conference, Boston University, November 2019.