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A Most Violent Game: A Framing Study on the Media's Coverage of Concussions and Injuries in Sports

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ABSTRACT

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The following is a study on the effects of framing the topic of concussions in the sports media. The study examined the differences between "perceptions of seriousness" of concussions based on two article conditions and how men and women, athletes and non-athletes, sports fans and non-sports fans all viewed the seriousness of concussions. Other variables of analysis included testing participants for their emotional empathy and aggressiveness in relation to their views on concussions. The findings of the study did not confirm most of the hypotheses, but the major hypothesis was supported. For participants who read the "serious" article condition, they reported taking concussions more seriously. Those that were exposed to the "less serious" article condition reported taking concussions less seriously. Therefore, the study shows that the framing of concussions in the sports media could have real consequences for both how the issue is discussed and perceived on the national landscape.

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CHAPTER 1

INTRODUCTION

Concussions and Sports

The importance of injuries in sport has grown over the course of time. And the lens through which the researcher sees these injuries is contextually driven in large part by the sports media. Over the past several years, in particular, the topic of concussions, head trauma, and the progressive degenerative disease known as Chronic Traumatic Encephalopathy (CTE) have stolen some of the headlines in the sports media landscape (Anderson & Kian, 2012). The 2015 cinematic picture "Concussion" starring Will Smith shed light on the National Football League's attempts to quell the issue in the past. The 2013 book and documentary "League of Denial" gave a more in-depth account of the long-term history of the concussion epidemic in American football. Not only that, but concussions in sports have become a hotbed topic within the medical community, terrifying evident even in youth sports (Marar, McIlvain, Fields & Comstock, 2012 & Mitka, 2010). In fact, Sports Illustrated published an article in July 2016 that described the results of a study by FAIR Health outlining a 500% increase for concussions throughout all of youth sports (Rains, 2016). Moreover, concussions have become an epidemic at no small scale; the epidemic ranges across nearly every sport imaginable. Concussions have been reported heavily in American football (Guskiewicz, et al., 2005) soccer (Delaney, et al., 2002), hockey (Tegner & Lorentzon, 1996) basketball (Gessel, Collins & Dick, 2007) and the list goes on. Progressively, it has been realized that a simple acknowledgement of these head injuries is not enough. More and more athletes, especially those in the sport of American football, are beginning to reap the long-term effects of head trauma by participating in their respected sport (Lehman, Hein, Baron & Gersic, 2012). Concussions in sports is not only a big issue within the

medical community, it is also one of increasing focus in media, journalism, and athletic departments across the country. The way in which the media frames the issue of concussions is the focus on this paper and has consequences for how athletes, their families, and coaching personnel attack the issue in the future. The possible implications in the media bring up questions of how journalists, sports communication leaders, and others in the sports media landscape should cover this issue. In the past, concussions have often been trivialized or kept hidden by those within the sports industry. Those that seek to profit from the athletes participation in the sport, may advise the athletes to continue doing so despite health concerns that would suggest they should sit out. For journalists, the relationships established with those in the sporting world are key for their coverage of certain stories. Yet, if those within the sports domain are not in favor of transparency with certain injuries like concussions, how should a journalist proceed? The obvious answer is with investigative vigor, but when the gatekeepers of information on injuries and player health are secretive the modes of disclosure within the topic of concussions endures a rocky path. The goal of this paper is to explore the existing media coverage on concussions in sports and see its effects on audiences. Another goal is to discover how different audience segments including those with varying levels of empathy and aggression, women/men, athletes/non-athletes, sports fans/non-sports fans, perceive the issue of concussions in sports.

CHAPTER 2

LITERATURE REVIEW

Violence In Sport

Within the paradigm of sports media, the degree to which violence is accepted and normalized is part of a great array of literature. Violence in sport is depicted on a wide spectrum. It can be seen as "legally punishable 'real' violence" or as "symbolic play." (Goldstein, 1983, p. 3). Moreover, violence in sport derives not only from the competitors but also from the "behavior of excitable fans" (Gunter, Bryant & Raney 2006, p. 353). And there are differences between sports. Some are inherently violent; Mixed Martial Arts, boxing, wrestling, and the focus of this study, American football, come to mind. Others are highly contested, yet only occasionally are of a violent nature, such as soccer (Gunter et al., 2006, p. 353) With all sport, even by pure modes of competition, there are foundational elements of violence.

Historically, violence in sport has been not only a sliver, but also a central sociocultural focus. Author Allan Guttmann (1986) chronicles the history of Roman gladiatorial battles in which spectators not only welcomed the strategy of battle, but also the bloody carnage that almost always laid as a result of the events. The primacy of sport in the days of Ancient Rome and Medieval Europe was the arousal from witnessing acts of violence as a central viewing experience. In fact, in Ancient Roman Chariot races, it was the fans who created more violence outside of the arena that the race participants (Guttmann, 1986). In medieval jousting tournament, fans salivated at the prospect that, "…contestants could be seriously hurt or even killed" (Gunter et al., 2006, p. 354).

Buried within this strong lineage of sports violence arise issues such as gender and hegemonic masculinity. At its core, the violence of sport is borne in large part from how it is

contextualized within a greater sociocultural framework. From a gender perspective, the institution of sport has long been characterized as a male domain. Within feminist scholarship, the institution of sport has often been characterized as "a fundamentally sexist institution that is male dominated and masculine in orientation" (Theberge, p. 16, 1981). Moreover, "because of the society's oppositional view of gender, when a woman succeeds in sport, she can be seen as a challenge to the established gender order" (Duncan, p. 247, 2006). Seen as a man's environment to prove his social worth, sport is also stratified within gender barriers, characterized by hegemonic masculinity. (Bryson, 1987) Fraternities and sport were established in large part to separate white, upper-middle class men, from the modernization at play in America at the turn of the 20th Century. Sport, "…served to define the gender order by differentiating men from women and higher-status men from lower status men. (Messner,1990, p. 18).

Sport as an area for the expression of gender dominance and hegemonic masculinity make sports a ripe environment for *hyper masculinity*. The most direct definition (Zaitchik & Mosher, 1993) is a, "masculine gender identity comprised of a cluster of beliefs that includes toughness, violence, dangerousness, and calloused attitudes toward women and sex" (Vokey, Tefft & Tysiaczny, 2013, p. 562). It is this hyper masculine framework that undergirds football in America according to scholars. Although "few males truly enjoy hitting and being hit" the socialization of the sport has made "aggression within the rule-bound structure of sport, as legitimate and natural" (Messner, 1995, p. 67). Toughness and physical force within the sport of football have become some of the most accepted interpretations of masculinity in American culture (Steinfeldt, Gilchrist, Halterman, Gomory & Steinfeldt, M. C., 2011, p. 249). Football players who are seen as "intimidating, dominating, and aggressive" on the field are those that earn the most respect from teammates and coaches, a result that may contribute to a player

feeling such superiority off the field (Steinfeldt et al., p. 341). A hyper masculine paradigm helps support the inherent violence of the game. Playing through such violence has become another norm (Stafford, Alexander & Fry, 2013). The previous scholarship provides a framework to understand the context of sports injuries and specifically the scholarship on concussions in sports such as football.

Sports Injuries and Concussion

Much of the literature on concussions in sports speaks to a clash of perceptions. There are the protectors of sport (how its always been played) and the challengers (violence/concussions in sport is bad). The injection of "concussions" and Chronic Traumatic Encephalopathy (CTE) into the media lexicon has challenged the status quo, particularly in the landscape of professional sports (Anderson & Kian, 2012). The results have consequences both for those covering the sport/audience and the athletes themselves. On January 1st, 2011, start National Hockey League (NHL) player, Sidney Crobsy, was blindsided by an opposing player. Only four days later, Crosby was struck hard to the ice again. Days later, his team, the Pittsburgh Penguins announced Crosby had a concussion. Although it appeared he would only be out for a week at most, his injury kept him sidelined the rest of the season into the playoffs ("Timeline: Sidney Crosby's Concussion," 2012). In a study on Crosby's concussion episode, a host of media reactions emanated from his concussion injury. Some felt that Crosby's concussion was a cautionary tale on the danger of sport, others said that Crosby's injury was politicized, while others felt that his injury was an ambiguous, largely understated issue (McGannon, Cunningham & Schinke, 2013, p. 894). A host of reporters fell into the overarching narrative of sport that forwards the denial or trivialization of pain. This trivialization is a strong aspect not only of the historical media narrative, but also the athletes. A "denial of pain" construct was demonstrated within a study of

rugby athletes (McClellan & McKinlay, 2011) Although broadcasters were frequently documented to have identified in-game injuries that should undoubtedly remove athletes from competition, players played through the speculation more times than not. And most likely also played through concussions (McClellan & McKinlay, 2011). In this case, the media is identifying situations in which athletes should be more cautious, yet the athletes are still playing anyway.

Although the aforementioned examples provide examples of a pervasive sense of injury/concussion denial, playing through pain, etc., that narrative is changing. Specifically within the context of football, the topic of concussions has been a focal point in recent scholarship. Most of the literature has focused on the plights of professional NFL players. After the death of former-NFL pro-bowler, Junior Seau, it was shown that coverage of concussions & CTE in the media landscape, shifted from episodic, isolated incidents to context of one of a "greater public health issue, which shows evidence of thematic framing" (Karimipour, 2016, p. 68-69). Moreover, this content analysis of news reports on NFL player suicides from 2000-2012 revealed the media's adoption of new language such as the phrases "concussion" and "CTE" (Karimipour, 2016). After a string of 12 NFL player deaths in this time frame started to create a "critical mass" of incidents, "journalists moved beyond questioning and provided more solution-based suggestions to their audiences, who saw at least one high-profile NFL suicide occurring almost every year" (Karimipour, 2016, p. 70).

With Seau's death as a potential trigger for enhanced media coverage on concussions/CTE, the way the issue has been framed has integrated a more medically rooted approach. In an analysis of articles that mentioned head related injuries in sport, articles that used language to downplay the severity of concussion related injuries were dwarfed compared to

those articles that implied the injuries should be taken more seriously (Ahmed & Hall, 2017). Specifically, in articles related to football, it was found that the word "concussion" was used frequently with "brain injury," "head injury," and "head trauma" as other descriptors. The dialogue and awareness of concussion-related injuries has spread on social media. Users on *Twitter* are discussing concussion-related injuries through news links, personal experiences, and medical treatment (Sullivan et al., 2012, p. 258). Social media is presenting a new environment in which individuals are engaging in the topic of concussions in sport.

An increasing awareness of the devastating effects of concussions paired with a reduction of the hyper-masculine narrative by the sports media have shifted common perceptions of concussions, CTE, and head trauma in the game of football (Anderson & Kian, 2012). Major media productions bringing attention to the issue such as the book and documentary, *League of Denial*, and the movie *Concussion* released in 2015, is a few hallmark examples of how the issue of concussions has been jettisoned into the mainstream American discourse (Furness, 2016).

Framing Theory

The following shows the potential the media has to influence public opinion on the issue of concussion-related injuries. Although numerous studies have linked media coverage to a change of public opinion on public health issues (Chapman, Raymond & Powell 2014, & Geller, Bernhardt & Holtzman, 2002), little scholarship exists on the effects of concussion-related media coverage and its relationship to attitudes, beliefs, changes in opinion on sports such as football that have seen increasing attention for concussions. To further grasp the role of sport media's effect on audiences regarding the issue of concussions in the coverage of football, the researcher looks to *Framing Theory.* One definition of Framing (Entmann, 1993) sees it as a process " to select some aspects of a perceived reality and make them more salient in a communicating

text…to promote a particular problem definition, casual interpretation, moral evaluation, and/or treatment recommendation for the item described" (p. 52). Tankard, et al. (1991) provides a similar definition by suggesting, "a frame is a central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection…" (p. 5). Author Todd Gitlin (1980) sees Frames as part of a broad cultural and societal context in which "persistent patterns of cognition, interpretation, and presentation" develop (p. 7). In sum, Framing Theory provides a vantage point for how certain pervasive beliefs are manifested over time in media texts, creating a tendency for entrenchment within society (Reese & Buckalew, 1994).

Framing Theory's broad scope and scholarship has found its place within the realm of public health (Shih, Wijaya & Brossard, 2008 & Lawrence, 2004). One study (Shih et al., 2008) analyzed the connection of print (*New York Times*) media frames and health epidemics. The study found that these epidemics (including West Nile Virus and Avian Flu) were framed around particular events surrounding the various cases. As different epidemics developed through these events, so did the narrative considerations around how the epidemics were framed. Furthermore, the study exhibits how the ability of an international health epidemic to be considered newsworthy (important) hinged on its ability to establish a series of compelling narratives for public consumption (Shih et al., 2008). It must also be considered that any public health issue can be framed in multiple ways, even if the inherent qualities of the issue have largely stayed the same (Lawrence, 2004). Specifically, one study on obesity found the existence of multiple media frames, with a change in how pervasively the issue was framed over the past two decades. By analyzing competing obesity media frames in the *New York Times* from 1985 to 2003, it was found that "popular understandings" of the root causes associated with obesity changed from the

individual and medical variety to the realm of environmental causation (Lawrence, 2004, pp. 64 & 69). Although the causes of obesity have not inherently changed, the context in which the media presented this issue over time greatly affected the public's perception of obesity's causes, 180 degrees. This study strongly relates to concussions and American football because while the exposure of the brain to hard contact, propensity to long-term damage has been constant, the way in which the media discovers and develops the framing of the epidemic has massive consequences for meaningful levels of public perception.

Concussions, CTE, and the overall discussion of brain trauma in American football are extensively chronicled as a massive public health issue (Macciocchi, et al. 2001 & Moses 2013). Framing Theory's ability to shed light on the media's power to transfer meaning, symbolism, and importance through certain frames, relays to areas in the public health domain, providing the foundation for its relevance in the concussion-American football conversation (Bigman, 2014). In a recently published study, authors David Cassilo and Jimmy Sanderson (2016) analyzed former NFL and collegiate star, Chris Borland's, decision to step down from the sport due to health related concerns before the 2015 season (Fainaru-Wada, M. & Fainauru, 2015). In a textual analysis of over 100 articles relating to his retirement, a handful of dominant frames emerged. The first was "health related concerns/risks of playing football" followed by the framing of Borland" and for print articles in particular, "the future of football" (Cassilo & Sanderson, pp. 9-10). Other frames were also prevalent in the analysis including "framing of the NFL," "parental impact", and "masculinity" (Cassilo & Sanderson, 2016, pp. 15-17). The authors concluded that "media outlets were more supportive in their coverage of football players who prioritized their health, thereby challenging long-standing sport ideology" that challenges the construct of playing through pain (Cassilo & Sanderson, 2016, p. 17). A similar study

(Sanderson et al., 2014) found that "Media attention and public awareness towards safety and health issues in football are increasing" (p. 17). By focusing on print media coverage, this content analysis uncovered several major frames for injuries related to NFL quarterbacks, Robert Griffin III and Jay Cutler. The first included "shifting the blame" to the teams for the injuries. Other frames included "emphasizing injury severity" and supporting the quarterbacks for decisions to not play (Sanderson et al, 2014, pp. 15-16). While other frames existed such as blaming the quarterbacks for their own injuries or characterizing their ailments as part of the game, it was clear after this study that more "supportive" frames emanated from the media coverage on these injuries (Sanderson et al., 2014, p. 17). A normative alteration in how the media frames not only concussions in football, but also all injuries in the game signifies a notable shift.

CHAPTER 3

HYPOTHESES AND DEMOGRAPHICS

Seriousness of Concussions

The first component of the hypotheses looks at the deployment of two article conditions to be read by the participants in the study. One article frames the topic of concussions in sports in a serious tone, giving credence to the severity of the long and short-term impact of head trauma in especially high contact sports. The other article depicts concussions in a less serious tone, using softer language and aversion techniques to downgrade the impact of head trauma in sports. It is hypothesized that there will be a significant difference between those that read the less serious article as to those that read the more serious article. For all intensive purposes, this is the framing section of our hypotheses, to see if those media devices have a recognizable impact on an audience. And it leads to this first hypothesis:

H1: Participants exposed to the serious concussion article condition will view the topic of concussions in a more serious light that those participants exposed to the less serious article condition.

Aggression and Empathy Traits

This study first measures the tendencies of study participants to show empathy and aggression. These two traits are presumed to have a large effect on how the participants who will view concussions in professional football in addition to the demographic controls.

Aggression

Our first trait discussed is aggressiveness that has a rich history specifically in the context of studies on sport and sport injury. Although the traditional definition of aggression does not appropriately apply to aggression in sport, Maxwell (2004) provides a useful definition within a

sport context. That is "any behavior, not recognized as legal within the official rules of conduct, directed towards an opponent, official, teammate or spectator" (p. 280). Within the context of sport participation, aggressiveness has been understood within the gender paradigm. One study (Lenzi, et al., 1997) showed that men act in a more explicit (direct) manner in sport using active opposition to achieve their means in the game. On the other hand, women still channel aggressiveness but in a more indirect fashion, "translated into a dysphoria and irritability" (p. 141). Aggression in sport is not only common among genders, it is common across worldwide cultures. Several studies have spoken to the mainstay of aggression in Western sport (Kirker, Tenenbaum, & Mattson, 2000; Maxwell & Moores, 2007; Visek, et al., 2010), while another study (Maxwell, Visek, & Moores, 2009) also speaks to the pervasive forms of aggression expressed in Eastern sport. Not only has aggression been identified as a key part of sport worldwide, it has been studied as an accepted and legitimate part of sport (Bredemeier, Weiss, Shields & Cooper, 1987; Ryan, Williams & Wimmer 1990). These connections to aggression in sport pave the way for the understanding of aggression in high-contact sports such as American football. In a study on the legitimization of aggressive behavior in sport it was found that young males in high contact sports (such as American football) were more likely to perceive aggression and violence as acceptable (Conroy et al., 2001). These studies speak to the fact that American society has walled off football (and perhaps the entire sport domain) as an appropriate venue for what would otherwise be egregious acts of aggression and violence. Moreover, Bredemeier (1985) encapsulates this very sentiment that pointing out an acceptance of aggression acts as a strong antecedent of future aggression behavior, furthering a cycle of normalcy and brute force in the sporting world. This leads to our next three hypotheses:

H2: Those with higher levels of aggression will view concussions as a less serious concern.

H3: Athletes will show higher levels of aggression than non-athletes.

H4: More aggressive athletes will de-legitimize severity of concussions

Empathy

Titchener (1924) defined the concept of empathy as a "process of humanizing objects, of reading or feeling ourselves into them" (p. 417). Moreover, empathy is to "feel the feelings of other people" having an "empathic disposition" (Sawyer, 1975, p. 37; Hogan, 1969, p. 309). The concept of empathy can be viewed as a personality trait, a cognitive-affective state, or an experiential process (Duan & Hill, 1996, pp. 262-63). In other words, empathy is a multi-faceted concept that can define the very nature of humanity. Author Gerald A. Gladstein (1983) divides the spectrum of empathy into two types, cognitive and affective. Cognitive empathy is "intellectually taking the role or perspective of another person" (p. 468) while affective empathy is "responding with the same emotion to another person's emotion" (p. 468). Empathy, by definition, revolves around forming some type of emotional connections to others, a possible explanation for one's perceptions they may hold in terms of looking at one's injuries, possibly in a football related context.

Maintaining strong levels of empathy or a lack thereof can change one's outlook on a variety of topics. Simply being of an older age, for instance, can increase one's levels of empathy and "personal involvement with other people's feelings" (Ze, Thoma, & Sucha, 2014, p. 933). Those with high levels of empathy also are more likely to help or sympathize with others' problems/lives. In a study on those with high risk for suicide, it was found that those with high levels of empathy were more likely to internalize affective and behavioral characteristics of those afflicted and provide a helping hand (Mueller & Waas, 2002). Similarly, other studies pointed to how those with high levels of empathy can affect attitudes toward oppressed groups (Batson,

Chang, Orr & Rowland, 2002; Cundiff & Komarraju, 2008). In Batson et al. (2002), it was found that when induced to empathize with a stigmatized individual (in this case a heroin addict), individuals were motived to positively adjust their actions and attitudes toward this individual and drug addicts in general. In Cundiff and Komarraju (2008) those with more empathy also had a stronger likelihood of viewing issues of women's rights and equality in a better light. The following studies reveal that individuals with or induced to have empathy react in more understanding, open, and eclectic ways than their less empathetic peers. Based on the scholarship on empathy the researcher posits a fifth hypothesis:

H5: Those with higher levels of emotional empathy will view concussions as a more serious concern.

Demographics Research

In this study, three different demographics will be analyzed: gender (male vs. female), athletes (athletes vs. non-athletes), and fans (fans vs. non-fans). The following literature speaks to the differences found between all three demographics in prior research on areas concerning sport and other disciplines of relevance.

Gender

It is worth exploring the divide between how men and women perceive the framing of concussions in football for several reasons. On the topic of gender several studies have outlined that male athletes have more conservative, traditional ideologies on gender than do male non-athletes (Andre & Holland, 1995; Houseworth, Peplow, & Thirer, 1989). On the other hand, female athletes encounter gender in different ways than males. Female athletes are likely to

experience the paradox of fighting between two different spheres, masculinity and femininity, defying gender norms more than their non-athlete counterparts (Krane, Choi, Baird, Aimar, & Kauer, 2004). And although female athletes still do not report lower levels of conforming to female gender stereotypes on the aggregate, they are more likely to feel a higher sense of self-body image than non-female athletes (Miller & Levy, 1996). Similarly, elite women athletes are more likely to encounter acute psychological problems than their male counterparts (Schaal et al., 2011). Women must act within a male-dominated domain, creating a clash of gendered discourse. (Bryson, 1987). From a normative standpoint, the institution of sport is starkly divided along clear gender lines, favoring a masculine discourse (Caudwell, 2003 & Messner, 2000). Moreover, "research indicates that the U.S. sports/media complex has positioned sports as male terrain; its 'masculinist cultural center' has been a site for boys and men to learn hegemonic masculinity" (Hardin & Greer, 2009. p. 211). Others (Birrell & Cole, 1990; Guttman, 1978) have argued that sports are ripe environments for gender dichotomization. This recurring theme of masculinity has impressionable consequences for how gender is negotiated in sports (Anderson, 2008 & Burstyn 1999). A study by Parks and Roberton (1998) found that female college students were more likely to support the use of nonsexist language in sport than their male peers. In terms of participating in sports, empirical evidence points to women ranking fun and friendship as their top priorities while men are more likely to list competition as most important (Battista, 1990). Certain sports themselves are also heavily divided by gender. A study by Nathalie Koivula (2001) found that university students labeled certain sports such as aerobics and ice-skating as more "feminine" examples of sport. On the other hand, the same respondents tagged "high action sports" such as football, ice hockey, and rugby as more "masculine" (p. 388). Furthermore, Koivula's (2001) study shows how men and women have different categorized certain sports to

have codified gender attributes. Therefore, it could be surmised that this process of gendering certain sports may have consequences for how the issue of concussions in football is discussed between males and females. Second, because concussions involve elements of violence, collision, and human impact, it is worth noting that women perceive issues of violence far differently than men (Smith, 1984; Locke & Richman, 1999). Women are less likely to support acts of military, conquest, war and killing (Smith, 1984). Similarly, women are more likely to sympathize with those abused in incidents of domestic violence (Locke & Richman, 1999). Men are also more likely to act aggressively in ways that produce physical pain or injury, supporting a realm in which football becomes a popular sport within a context of masculinity (Eagly & Steffen, 1986). Lastly, gender differences also factor prominently in framing studies on sport. It must be noted that the stories on concussions that will prominently be discussed in this study come from an industry run in vast majority by male sports editors, writers, and producers (Lapchick, Breden & Wright, 2006). Sports television has shown to be framed with multiple gender stereotypes that relegate women to a secondary role (Koivula, 1999). Additionally, although it has been idealized that coverage of women in sports has improved, a study (Kian, Berstein, & McGuire, 2013) found that coverage of the 2012 London Olympics still treated women athletes as "girls" with a focus on their body parts. Moreover, a large majority of the content created within sports media pertains to a male perspective, likely shifting the dialogue on concussions within a masculine context. Given the differences in how males and females encounter issues in sport here is the first hypothesis:

H6: Females are more likely than males to view concussions in football as a serious concern.

Athletes vs. Non-Athletes

Several studies have suggested that student-athletes hold different attitudes and adapt to their environments differently non-athlete counterparts (Aries, McCarthy, Salovey & Banaji 2004; Watson 2005; Whitt, 2001; Wolf-Wendel, Toma, and Morphew, 2001; Wolniak, Pierson, and Pascarella, 2001). In a study of student-athletes over a four-year span, it was found that student-athletes surpass their non-athlete counterparts in sociability/extraversion metrics and self-reported well-being. Student-athletes are also less neurotic than non-athletes, speaking to another strength for participation in collegiate sport (McKelvie, Lemieux, & Stout, 2003).

More related to sports injuries, several studies speak to the tendencies of athletes to feel a sense of self-reliance, often times at the expense of their personal health (Watson, 2005; Morente-Sanchez & Zabala, 2013). In a study at a major Division I school in the Southeastern U.S., a survey of nearly 200 undergraduates (both athletes and non-athletes) found that "student-athletes have less positive attitudes toward help-seeking behavior than their non-athlete peers" (Watson, 2005, p. 447). Athletes are also highly like to engage in risky behaviors such as doping in order to increase their in-game performance (Morente-Sanchez & Zabala, 2013). The study by Morente-Sanchez and Zabala (2013) found that although athletes recognize the cheating aspect of doping, they also give much credence to its effectiveness and legitimacy as a way to gain an edge in playing across a wide spectrum of sports. In specific reference to concussions, another medical study found that athletes are more likely than not to still participate in their respective sport even if known concussion-like symptoms are reported (Register-Mihalik, 2013). Similarly, in looking at high school football players in general, athletes were shown to have a high tendency to not report a concussion because of a perception that it was not serious enough for medical attention (McCrea et al., 2004). In short, the ability of athletes to favor high-risk

behaviors places them as a likely candidate to overlook the severity of concussions as opposed to non-athletes, which leads to the second hypothesis:

H7: Non-athletes are more likely than athletes to view concussions in football as a serious concern.

Sports Fans vs. Non-Sports Fans

The third demographic comparison are fans of sport versus those who do no watch sport. Those who view high-contact, aggressive sports such as football, could use these sports to justify the appropriateness of aggression. (Berkowitz, Ardrey, Lorenz, Montagu, Morris, & Storr, 1969). Therefore, by watching sports such as football, spectators could: become led to believe aggression is justified, become reminded of a prior life frustration/act in frustrated ways, and possibly become reminded or his or her own aggressive tendencies (Sloan, 1989). Depending on the degree of how intense a sports fan can become, an irrational psychology can also be established, tilting some fans in the direction of "dysfunctional" (Hunt et al., 1999). According to Hunt et al. (1999) some sports fans are so intense about their teams or sports in general that their fandom becomes their "primary form of self identification…[where] the dysfunctional fan uses the sports team, player or whatever the schema-target is, as the primary method to identify his or her own self to others" (pp. 446-447). A similar study on sports fans versus low or non-sports fans found that fans of sport are "more likely to believe that fans of the team they are identified with possess special qualities" (Wann & Branscombe, 1993, p. 1). In specific studies testing sports fans versus non-sports fans. In television viewing, sports fans were shown in one study to be more involved viewers, emotionally connected to the content surrounding their teams (Gantz,

Wang, Paul & Potter, 2010). Such emotion leads to fans justifying the behavior of their programs, sometimes even to their detriment. In fact, a 2013 study by authors Natalie Brown and Andrew Billings on the University of Miami, Florida football scandal revealed that fans of the team on social media were more likely to attack accusers of the program (i.e. on Twitter and Facebook posts) and divert the attention away from the crisis itself. Although the evidence pointed to the program's overwhelming illegal financial ties to a wealthy booster, the fans unabashedly defended the quality of the program from onlookers. In this sense, the fans acted as willing crisis communicators, continuing to provide evidence that the nature of sports fans is far different from any other that would draw similar comparisons. Finally, in extreme cases, when fans internalize their team, in other words, when the team identity becomes a part of the fan's self, fandom can lead to tendencies toward violence. Another study revealed that such fans that had an ultra-strong fan identity were more likely to exhibit verbal and physical aggression. (Shoham, Dalakas & Lahav, 2015). The strong differences between the fan and non-fan communities provide another demographic to test leading to the third hypothesis:

H8: Non-sports fans are more likely than sports fans to view concussions in football as a serious concern.

CHAPTER 4

METHOD

The method for this study is a quantitative experimental research design focused on the framing of the concussions in sports via two article conditions; one in which a concussion injury is portrayed more seriously and one in which it is portrayed less seriously. Before and after reading the articles, participants in the study went through a series of steps. This included taking a 56-question "pre-test" that sought to understand participant's aggression and empathy. The reading of one of two article conditions was followed by a four question "post-test" that sought to collect the participant's gender and status as an athlete/non-athlete, sports fan/non-sports fan, as well as their favorite sports.

Participants and Procedure

This survey was created with the help of Intro to Psychology students at a mid-sized research institution in the American Southeast. Respondents took all three parts the survey online via Qualtrics. The survey was administered on the school's Department of Psychology's SONA system. Participants were recruited from undergraduate psychology and mass communication classes. No particular subsets of that student population were targeted in the recruitment process. Therefore, no unequal distribution of risks based on sampling criteria was present. At the outset of the survey, an informed consent document was attached along with a choice to opt out of the survey without any consequence to the potential participant. The informed consent document also ensured that participants were 18 years or older to participate, a prerequisite in participation of this study. If the participant agreed to the informed consent, they were led to the remainder of the survey questions.

This survey was created on March 7, 2017 and made available the following week from March 14th-March 22nd, 2017. For successfully completing this study, students were awarded 1 participation credit for psychology courses or five extra credit points for mass communication courses. This research institution was a desirable population for this study because of the school's rich amount of both current and former athletes along with the readily available option of recruiting students through the SONA database.

The survey had three main parts with additional instructions/informed consent and debrief sections. After filling out the informed consent section, participants were led to a pre-test that measured aggression and empathy. All of those questions were ordered in a 56-question format. The second major section allowed participants to read one of two article conditions subsequently responding to four post-test questions related to how participants viewed the seriousness of concussions after having read the articles. And finally, participants were directed to a four questions post-test that measured demographics questions such as gender, athlete/non-athlete, sports fandom, and favorite sports team.

Measures and Description of Survey

The pre-test, perception of seriousness index, and post-test survey questions were all provided with answers based off a five-point Likert-scale format (Vagias, 2006). Two types of Likert-Scale answers were used. One type ranged from Strongly Disagree=1 to Strongly Agree=5. The other ranged from Not Important=1 to Extremely Important=5. The anchors from these Likert-scales were revised to fit a five-point scale for purposes of this study.

Aggression/Empathy Pre-Test. In the 56-question pre-test, the first question focused on the participants overall attitude toward head trauma/concussions in sports. It used the Likert-scale answers ranging from Not Important=1 to Extremely Important=5. The next six questions

(questions 2-7) were reserved for athletes only. These questions were directed toward discovering the participants' "competitive aggressiveness" (Maxwell & Moores, 2007). The second scale used (questions 8-23) was a more wide-ranging concept of aggression across the board (Buss & Perry, 1992). All participants were asked to respond to these questions. This scale considered four major areas constituting aggression: physical aggression, verbal aggression, anger, and hostility. More specifically the questions on aggression include one's tendencies toward physical/verbal violence, physical force, competitiveness, provocation, loss of control, retribution, abuse, and threatening others. Questions 2-23 on aggressiveness were put on a Likert-scale format that ranged from Strongly Disagree=1 to Strongly Agree=5.

The last 33 questions were derived from a questionnaire on emotional empathy (Mehrabian & Epstein, 1972). Like the previous six questions, the Likert-scale answers ranged from Strongly Disagree=1 to Strongly Agree=5. For the purposes of this study on concussions in sports, choosing the emotional empathy questionnaire deepens the definitional perspective of empathy itself, providing a more assured framework for judging one's empathy in relation to the topic. The nature of the questions on empathy is wide-ranging in order to gauge a broad spectrum of empathy. The researcher is using the entire emotional empathy questionnaire as it appeared in Mehrabian and Epstein's (1972) original study. Questions in the emotional empathy questionnaire relate to one's propensity for feeling/exhibiting sadness, affection, love, sensitivity, and the humane treatment of others/animals.

Perceptions of Seriousness. After taking the 56-question pre-test, subjects read one of the two article conditions assigned. The article conditions both revolve around University of Alabama senior offensive lineman Alphonse Taylor and University of Alabama head coach Nick Saban. The first article portrays his injury in a serious tone (Heim, 2016). The piece describes

how Taylor did not participate in practice leading up to a big game against LSU while explaining how it's not the first concussion of his career. Heim's piece goes on to describe how Taylor views his injury as "no longer about football" with a quote on how he is taking his future health and family into consideration with returning back to the field (Heim, 2016, para. 7). The second article provides a different perspective on Alphonse Taylor's recent injury (Hill, 2016). Coming from the angle of University of Alabama head coach Nick Saban, the Taylor injury seems less than serious. Coach Saban is quoted as saying he believes the concussion injuries sustained to a couple of his players are "not serious things" simply requiring "another day's rest" (Hill, 2016, para. 2). The author also describes how Saban only expected Taylor to be out for one practice, further calling his concussion injury as "minor." These two pieces provides a stark contrast to how the researcher views the same injury in two different ways. The first sees the injury itself, the overall idea of head trauma as a serious concern. It provides a perspective from the athlete involved with the injury with a more normative section on how concussions are serious for all football players. The second article sees the same injury of little significance, without hearing from Alphonse Taylor whatsoever. The only quotes provided are statements from Coach Saban that echo an urge for maintaining the team's status quo, a denial of serious injury considerations.

In accordance with each of the two conditions, a four-question survey was developed to gauge the perceptions of seriousness toward concussions each participant had to the article they read. Perceptions of seriousness. The questions focused on the injury to Alphonse Taylor, how participants felt about the subjects (Saban and Taylor) involved, the author, and finally the perception of head trauma/concussions as shown in each article. All of the questions were self-established in order to meet the criteria needed to satisfy answers related to these specific articles.

Demographic Post-Test. Finally, four-questions were developed in order to discover demographic questions. Three of the four answers were given in a five-point Likert Scale format ranging from Not Important=1 to Extremely Important= 5. These questions asked the participants' gender, identity as an athlete/non-athlete, sports fan/non-sports fan, and if the participant identified as a sports fan, their favorite sport with a slot to write-in their answer. After taking the post-test, participants were led to a debriefing section where they were told the purpose of the study.

Data. The core data from the study was processed and collected by way of Qualtrics. The latter is a software that enables online data collection. The survey was put within the Qualtrics software. The link to that study through the Qualtrics interface was then placed on the SONA system to enable the student population to accessibly take the survey. The data were analyzed using the Statistical Package for the Social Sciences (SPSS).

Variables. Five independent variables exist in this study including gender, athlete/non-athlete, and sports fan/non-sports fan. The other two looked at the participants' who either read the article portraying concussions as less serious or more serious, the two article conditions (Heim 2016 & Hill 2016). The study also uses the answers from the emotional empathy questionnaire (Mehrabian & Epstein, 1972) and aggression questionnaire (Buss & Perry, 1992) as covariates in this study. The competitive aggressiveness questions (Maxwell & Moores, 2007) were asked yet discarded as a part of this study, a decision that will be touched on later in the limitations section.

Cronbach's alpha (1951) was used to evaluate the reliability of all scales. The pre-test was divided into two sections, the first looked at the 33 questions from the empathy questionnaire (Mehrabian & Epstein, 1972). The reliability coefficient for empathy was

α= .823. The second area looked at the 16 questions from the aggression questionnaire with a reliability coefficient of α= .872. And finally the two, four-question post-tests related to the article conditions were placed into one perceptions of seriousness index. Because the four questions for each of the article conditions were similar, the researcher took all of the participant answers for both sets, and established one four-question perceptions of seriousness index with a reliability coefficient of α= .751.

CHAPTER 5

RESULTS

This study was aimed to examine the effects of the framing of concussions in the sports media. Additionally, this study explored the effects on those with different levels of empathy and aggression. The study also looked at independent variables such as gender, athlete vs. non-athlete, and sports fan vs. non-sports fan. Two conditions were also deployed to participants who read one of two articles that framed the concussion issue in either a serious or less serious fashion. A total of 55 participants completed the online survey. That included 20 women (63.6%) and 35 men (36.4%). 26 (47.3%) of participants identified as athletes while 29 (52.7%) identified as non-athletes. Additionally, 47 (85.5%) of participants identified as sports fans while only 8 (14.5) identified as non-sports fans. In terms of the two conditions, 27 (49.1 %) of the participants read the "serious" article on concussions while the other 28 (50.9%) read the "less serious" article on concussions.

Perceptions of seriousness

H1 looked at whether participants exposed to the serious concussion article condition will view the topic of concussions in a more serious light that those participants exposed to the less serious article condition. A *t* test was conducted between those 27 participants that read the serious article condition (M=3.95, $S.D.$=0.66) and the 28 participants who read the less serious article condition (M=2.86, $S.D.$=0.67). The test revealed a significant difference between the conditions ($t(53)= 6.13$, $p<.001$) (Table 3). Based on the results, those who were exposed to the more serious article condition appear to take concussions in sports more seriously than those in the less serious condition.

Table 1

Hypothesis	S/N	df	*t*	*p*	*M*	*S.D.*
H1	Supported	53	6.13	.000	3.95 (Serious) & 2.86 (Less Serious)	0.66 (Serious) & 0.67 (Less Serious)

Aggression

Next, *H2* looked at whether those with varying levels of aggression (independent variable) would view concussions in sports with less serious concern (dependent variable). A simple linear regression analysis was conducted ($F(1, 53)= .115$, $p=.736$) with an R^2 of .002 (Table 2). Based on the findings here, the researcher did not find a significant relationship between aggression and responses to the perceptions of seriousness.

Hypotheses 3 and 4 related to aggression were discarded from this study because of an improper balance between athletes and non-athletes, along with a mixture of non-athletes responding to the wrong questions, intended only for athletes. Some athletes also failed to respond to the question. Overall, the existence of small concentration of "non-athletes" in this study, made any rendering of a decision as to the affirmation of *H3* and *H4* impossible.

Table 2

Hypothesis	S/N	df	F	*p*
H2	Not Supported	1, 53	.115	.736
H5	Not Supported	1, 53	.156	.694

Empathy

H5 was those with higher levels of emotional empathy will view concussions as a more serious concern. The goal here was to discover the relationship between one's score on the emotional empathy questionnaire (independent variable) and their answers to the questions from the perceptions of seriousness index (dependent variable). The researcher conducted a simple linear regression analysis ($F(1, 53)=.156$, $p=.694$) with an R^2 of .003 (Table 2) Based on the findings here, the researcher found that there was not a significant relationship between empathy and responses to the perceptions of seriousness.

Gender

H6 predicted that women would be more likely to view the topic of concussions in sports as a serious issue than men. The researcher conducted an independent samples *t* test (Table 1) comparing men and women on the basis of their perceptions of seriousness. No significant difference was found ($t(53)= -.456$, $p> .65$) (table 2) between men ($M=3.33$ *S.D.*=0.76) and women ($M=3.44$, *S.D.*=0.92) (See Table 1). Therefore, H6 was not supported.

Athlete

H7 predicted that non-athletes are more likely than athletes to view concussions in football as a serious concern. Another independent samples t test was conducted comparing the mean scores from 26 Athletes ($M=3.46$, *S.D.*= 0.90) and group of 29 Non-Athletes ($M=3.34$, *S.D.*= 0.84) (Table 1) to the mean scores of the perceptions of seriousness test (Table 1). No significance was found in this relationship ($t(53)= .537$, $p= .59$). Thus, H7 was not supported,

providing no significance in differences between answers from athletes and non-athletes on the seriousness of concussions in sports.

Sports Fans

H8 looked at whether non-sports fans are more likely than sports fans to view concussions in football as a serious concern. Like the previous two hypotheses, an independent samples *t* test was conducted with the mean scores from 47 sports fans (M=3.38, $S.D.$= .83) to just 8 non-sports fans (M=3.50, $S.D.$= 1.07) (Table 1) and the mean scores from the perceptions of seriousness test. In this independent samples test, no significance was discovered ($t(53)$= .369, p= .71) (Table 1). Furthermore, there was no significance between sports fans and non-sports fans in their perceptions of concussions as a serious concern.

Table 3

Hypothesis	S/N	df	*t*	p	M	SD
H6	Not Supported	53	-.456	.65	3.33 (Males) & 3.44 (Females)	0.76 (Males) & 0.92 (Females)
H7	Not Supported	53	.537	.59	3.46 (Athletes) & 3.34 (Non-Athletes)	0.90 (Athletes) & 0.84 (Non-Athletes)
H7	Not Supported	53	.369	.71	3.38 (Sports Fans) & 3.50 (Non-Sports Fans)	0.83 (Sports Fans) & 1.07 Non-Sports Fans)

CHAPTER 6

DISCUSSION

The following paper's exploration was in finding a connection between the framing of concussions and how audiences viewed the popular issue of concussions in sports. The researcher also sought to see if individuals of varying dispositions and demographics had different attitudes toward concussions to understand more cultural trends within this area.

The first hypothesis, H1, was the only one that showed any type of significance. The prediction here was that those respondents who were exposed to the more serious article condition would take the issue of concussions in sports more seriously than those who were exposed to the less serious article condition. This result shows the effects of article framing in how the entire issue was portrayed within the same type of story about Alphonse Taylor and Head Coach Nick Saban. The results came back that those who read the serious articles (by a mean score of 1.10) were more likely to respond to concussions in the perceptions of seriousness test in a serious manner. The significance of this relationship was also revealed in the independent samples *t* test (Table 10).

This shows how powerful the media's ability is to frame an issue on the same topic. Based on the interviews in each article, perspectives of the authors, etc., it was felt greatly by the participants who read the more serious article, that concussions were a topic of legitimate concern. I believe that one major reason the hypothesis was supported is that the framing of the serious article condition is powerful by the author (Heim, 2016). Heim (2016) reaches out to the harmed athlete (Alphonse Taylor) and chronicles his perspective, while also adding sensory language relating to the concussion issue in-depth. Furthermore, I believe that participants responded to the serious article condition differently because of the opinions given by Taylor, the

player concussed. The quotes provided by Taylor in the article describe how, "at the end of the day, you have to think about the overall health and what's best for you and your family," (Heim, 2016, para. 6). Taylor goes on to discuss "concussion protocol", his symptoms, and the brutal incident that sparked the concussion in the first place (Heim, 2016, para. 7). The other article does not dive into the critical concussion details, failing to even talk about Taylor in depth. The Hill (2016) piece fails to provide a lack of personal details in which the reader can connect to the concussion issue (Hill, 2016). Even though these articles were on the same topic, I believe that the support for H1 shows the potential impact for framing in the sports media on concussions if the author's tone and evidence (especially from injured players) are prevalent. Additionally, the respondents identified heavily as sports fans (47 of the 55). And in the post-test survey, several of these fans identified as football fans. I think that the participants' knowledge of the sport may have also led them to intelligently identify the seriousness of concussions through reading the serious article condition. While those that were exposed to the less serious article condition may not have been afforded that opportunity to understand the scope and severity of the injury. Moreover, I believe that the support of H1 shows concussions in sports are a topic worth discussing in the media landscape. The potential to change or sway people's minds on the topic is possible through the power of a well-written story.

Next for H2 it was predicted that those with higher levels of aggression were predicted to show less serious concern for concussions in sports. In sport aggression has been normalized (Bredemeier et al., 1987; Ryan et al., 1990) and it has been studied that those with higher levels of aggression are more likely to see that behavior in sport as completely normal (Bredemeier, 1985). This speaks directly to the seriousness of concussions conditions relating to the sport of

football. But no significant results were found for aggressiveness as an indicator for variance in the responses to the perceptions of seriousness section.

H3 and H4 remain inconclusive because of the incomplete data received from the sections of the survey that dealt with athletes and aggression specifically.

Moving on to H5, it was predicted here that those with higher levels of emotional empathy will view concussions as a more serious concern. Several studies have pointed to how those with stronger levels of empathy are more likely to view individuals, societal problems, etc. in a more nuanced fashion (Mueller & Waas, 2002). Having more empathy is also said to intertwine one with other's feelings and thoughts, the necessary step in humanizing concussions through reading one of the seriousness of concussions article conditions (Ze, Thoma, & Sucha, 2014, p. 933). But there was no connection between varying levels of empathy for the participants and their responses to the perceptions of seriousness. After running the regression analysis, there was no significant relationship found that would lead anyone to believe those with varying levels of empathy as a variable saw the seriousness of concussions in different lights. The empathy variable was not a strong enough indicator.

H6 predicted that women would view concussions as a more serious concern than men. Research has indicated that sports are an area prevalent with gender dichotomization (Birrell & Cole, 1990; Guttman, 1978). And within the sports realm, men are said to hold more traditional and conservative ideologies (Andre & Holland, 1995; Houseworth, Peplow, & Thirer, 1989). This led the researcher to believe that there would be a noticeable difference in how men and women reacted to the topic of concussions in sports. But there was no significant correlation between the responses to the seriousness of the articles from a gender standpoint. The explanation for this is perhaps a result of there being no significant differences in how men and

women view the seriousness of concussions. It could also be plausible that because only 55 participants took part in the experiment, there was not enough data to find a significant difference between the perceptions of seriousness of men and women. Additionally, of the 55 participants, 35 of those were women. So the lack of balance between men and women in this experiment may be another reason H6 was not supported in this study.

H7 predicted that non-athletes are more likely than athletes to view concussions in football as a serious concern. A host of studies (Aries et al., 2004; Watson 2005; Whitt, 2001; Wolf-Wendel, Toma, and Morphew, 2001; Wolniak, Pierson, and Pascarella, 2001) have suggested a strong difference in how athletes and non-athletes idealize certain issues. A great deal of the scholarship cited focuses specifically as well on student-athletes, the source of a great deal of the participants in this survey. But no significant difference was found between how athletes and non-athletes rated the seriousness of concussions from the perceptions of seriousness index responses. An explanation for this may lie in there being no significant difference in how athletes and non-athletes view the seriousness of concussions. Another reason may be simply that there were not enough participants in this study to support H7. An additional explanation may be that although a great deal of the participants identified as non-athletes, all but 8 participants identified as sports fans. This crossover may have given the athlete and non-athlete pools more in common than expected.

H8 predicted that non-sports fans are more likely than sports fans to view concussions in football as a serious concern. Studies have suggested in the past that sports fans are more likely to act aggressively (Shoham et al., 2015) with a potentially "dysfunctional" psychology that could get in the way from legitimizing the concussion issue (Hunt, Bristol, & Bashaw, 1999). In essence, sports are the end all be all, and anything to interfere with the continuance of sports in

its original form is a threat. But like the previous two hypotheses, H8 found no significance between sports fans/non-sports fans and their reactions to the perceptions of seriousness index. Non-sports fans were slightly more likely to view concussions as serious based on the mean scores of that group, but not enough to render a statistically significant enough relationship difference to affirm H8. The other consideration here, to be discussed more in the limitations section, is that only 8 of the 55 participants identified as a "non-sports fan" skewing the data heavily toward the sports fan subset. That is one possible explanation for why there did not exist a significant difference in the responses between sports fans and non-sports fans on the seriousness of concussions. Another reason may be that there simply is not a strong difference between sports fans and non-sports fans on the seriousness of concussions. A final plausible explanation for the lack of support for H8 may also rest with the total number of participants. A stronger overall pool of data may have given more credence to the following hypothesis.

CHAPTER 7

CONCLUSION/LIMITATIONS

Conclusion

The results of this study do no support hypotheses H2-H8, but do show support for H1. H1 predicted that participants who read the more serious article condition would value the seriousness of concussions more so than those who read the less serious article condition. The results showed a significant difference for those that read the serious article condition. Those who read the serious article were more likely to identify with the seriousness of concussions overall than those who read the less serious article condition. Next, H2 & H5 relating to aggression and empathy did not show to correlate significantly to how participants perceived the seriousness of concussions after reading the articles. It was also shown in H6 that females and males showed no significant difference in their responses to the seriousness of concussions. H7 was proven false as athletes and non-athletes did not show a significant difference in their responses to the seriousness of concussions. And H8 was also unsupported when sports fans and non-sports fans showed no significant difference in their responses to the perceptions of seriousness condition index. All of these findings, as laid out in the discussion section, lay contrary to the scholarly work that showed major differences in these categories, several in areas relating to sport.

Limitations and Implications

One of the chief limitations of this study was the number of the participants. 55 total participants took the survey, and although the two conditions were equally distributed, the small population pool resulted in some glaring problems. One of those problems was that 47 of the 55 participants said they were sports fans making the non-sports fans pool small for H3.

Additionally, although the dispersion between athletes and non-athletes was fairly even (26 athletes & 29 non-athletes), questions 2-7 in the pre-test for athletes only had to be discarded. Therefore, the researcher could not answer the two hypotheses related to competitive aggressiveness. The reason this data was discarded is because some of the participants who identified as athletes did not respond to these questions when they should have done so. Additionally, some participants who were non-athletes responded to these questions anyway, skewing the data pool. A second limitation was the way in which the study was presented on the SONA system available for student participation. The study was labeled "sports media study" possibly skewing the study toward athletes and fans of sports. In retrospect, a better option would have been to give the study a more neutral title to field a more balanced group of participants. This is one possible reason the researcher had such a strongly weighed pool of sports fans. A third limitation was the natural variability of self-reported surveys. It is difficult to render if people were truthfully responding to all of the questions and, in particular, responding to the questions appropriately that would indicate one's tendencies toward aggression and maintain high levels of empathy. Another limitation was the way in which the pre-test survey questions were displayed. Although not an egregious error, the participants saw the five-point Likert scale for agreeableness in an unconventional, yet consistent format of "strongly disagree" – "strongly agree"- "disagree"-"neutral"-"agree." Finally, the participants were all derived from a University setting in which there were more athletes perhaps compared to a normal population. Additionally, because of the survey's namesake, it increased the chance of athletes taking this survey.

Although the hypotheses were not support for gender, athletes, and sports fans, more analysis in this area would lend itself well in a future study. Perhaps generating a more diverse

and larger group of participants would increase the reliability of these data subsets. Moreover, applying this same ideology for the aggression and empathy measures is another idea for future research. Overall, the support for H1 shows that the framing of concussions in the sports media has an effect on audiences. This was the only significant result affirming the hypothesis. Like many issues in sport, the language and on-going dialogue established around head trauma, concussions, and other serious injuries to athletes is one to monitor in the future. With increased media attention on concussions (especially in football), the potential for framing effects to manifest could increase. In general, the way in which the articles were framed also has consequences for how audiences would view the seriousness of concussions. Outside of simple demographics, the way in which the concussion topic is treated by the media has long-term effects for how the public discourse will be shaped in years to come.

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APPENDICES

Appendix A

Aggression and Empathy Questionnaire

Questionnaire for Empathy and Aggression Measures*

Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of personality and social psychology*, *63*

Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy1. *Journal of personality*, *40*(4), 528

Vagias, Wade M. (2006). "Likert-type scale response anchors. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University

*The following questionnaires were adjusted to fit the criteria of our study and the following Likert scale was revised to fit a five-point scale

Concussion Question

What is your view of head trauma/concussions in sports?

1	2	3	4	5
Extremely Important	Moderately Important	Neutral	Low Importance	Not Important

Athletes Questionnaire (ONLY ANSWER IF ATHLETE)

1) Violent behavior, directed towards an opponent, is acceptable

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2) It is acceptable to use illegal physical force to gain an advantage

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3) I taunt my opponents to make them lose concentration

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4) I use excessive force to gain an advantage

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5) I verbally insult opponents to distract them

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6) Opponents accept a certain degree of abuse

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

General Aggression Questionnaire

Physical Aggression

7) Once in a while I can't control the urge to strike another person

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8) Given enough provocation, I may hit another person

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9) If somebody hits me, I hit back

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10) I get into fights a little more than the average person

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11) If I have to resort to violence to protect my rights, I will

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12) There are people who pushed me so far that we come to blows

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

13) I can think of no good reason for ever hitting a person

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

14) I have threatened people I know

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

15) I have become so mad that I have broken things

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Anger

16) I flare up quickly but get over it quickly

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

17) When frustrated, I let my irritation show

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

18) Sometimes I feel like a powder keg ready to explode

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19) I am an even-tempered person

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

20) Some of my friends think I'm a hot head

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

21) Sometimes I fly off the handle for no good reason

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

22) I have trouble controlling my temper

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Emotional Empathy

23) It makes me sad to see a stranger in a group

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

24) People make too much of the feelings and sensitivity of animals

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

25) I often find public displays of affection annoying

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

26) I am annoyed by unhappy people who are just sorry for themselves

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

27) I became nervous if others around me seem to be nervous

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

28) I find it silly for people to cry out of happiness

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

29) I tend to get emotionally involved with a friend's problems

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

30) Sometimes the words of a love song can move me deeply

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

31) I tend to lose control when I am bring bad news to people

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

32) The people around me have a great influence on my moods

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

33) Most foreigners I have met seemed cool and unemotional

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

34) I would rather be a social worker than work in a job training center

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

35) I don't get upset just because a friend is acting upset

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

36) I like to watch people open presents

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

37) Lonely people are probably unfriendly

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

38) Seeing people cry upsets me

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

39) Some songs make be happy

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

40) I really get involved with the feelings of the characters in a novel

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

41) I get very angry when I see someone being ill-treated

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

42) I am able to remain calm even though those around me worry

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

43) When a friend starts to talk about his problems, I try to steer the conversation to something else

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

44) Another's laughter is not catching for me

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

45) Sometimes at the movies I am amused by the amount of crying and sniffling around me

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

46) I am able to make decisions without being influence by people's feelings

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

47) I cannot continue to feel OK if people around me are depressed

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

48) It is hard for me to see how some things upset people so much

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

49) I am very upset when I seen animals in pain

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

50) Becoming involved in books or movies is a little silly

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

51) It upsets me to see helpless old people

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

52) I become more irritated than sympathetic when I see someone's tears

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

53) I become very involved when I watch a movie

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

54) I often find that I can remain cool in spite of the excitement around me

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

55) Little children sometimes cry for no apparent reason

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix B

Two Article Conditions and Post-Test Questions

Article 1*

Heim, Mark. (2016, November 1). Alabama's Alphonse Taylor on how Jonathan Allen gave him a concussion, LSU trash talk and his weight. Retrieved from http://www.al.com/sports/index.ssf/2016/11/alabamas_alphonse_taylor_talks.html

* Parts of the original article are excluded from our version for a lack of relevance to our study's focus on the framing concussions

---

Guard Alphonse Taylor is going through drills this week as No. 1 Alabama prepares to travel to No. 15 LSU on Saturday night.

The status of Taylor, who has not played since suffering a concussion Oct. 8 against Arkansas, remains uncertain.

Taylor said on Saturday this isn't the first concussion of his Crimson Tide career.

"I've had a few in my career at Bama," Taylor told WNSP-FM 105.5. "It's not something I worry about or try to keep up with."

Taylor didn't reveal a number as far as concussions sustained. He did, however, say when a player is in concussion protocol-as he is- it is no longer about football.

"At the end of the day, you have to think about your overall health and what's best for you and your family," said Taylor, who shared he was expecting a daughter in December. "I'd rather have my overall health than play in the NFL.

"When you are in concussion protocol, it's not even about football anymore. It's more about your overall health and doing what's best for you."

He said he continues to go through a series of tests every day.

"Once (symptoms) go away, you get tested again and if everything is clear, then you are cleared to play."

Taylor was asked about his experiences blocking Alabama defensive lineman Jonathan Allen, who has collected 35 tackles and six sacks this season.

"Oh yeah," when asked if that resulted in a concussion," Taylor revealed. "One of them back in the day. Jonathan Allen is solid. He may look quick on the field, but he's every bit of 285 (pounds). He is solid."

While Allen's weight came up, so did Taylor's.

The redshirt senior started every game at right guard last season, but he was relegated to working with the second-team offense during the spring due to weight and conditioning issues.

Taylor said he prefers to be heavier.

"I feel differently," said the 350-pound Taylor. "(Get) more power at the hips. It is harder for them to move me. It is easier for me to move them. Some people would debate that when talking about quickness."

Whether Taylor is cleared to play Saturday against LSU remains to be seen.

Article 2
Citation*

Hill, Kassidy. (2016, October 10). Nick Saban: Foster, Taylor likely to return soon from concussions. Retrieved from http://gridironnow.com/saban-foster-taylor-likely-concussions/
* Parts of the original article are excluded from our version for a lack of relevance to our study's focus on the framing concussions

_____

Nick Saban updated the injury status of linebacker Reuben Foster and guard Alphonse Taylor on Monday, with the upshot being both seem likely to play this week at Tennessee.

"From an injury standpoint, we have a couple of guys that will be out today probably," he said during his weekly news conference. "Hopefully they'll be back (TueS.D.ay). We're a little banged-up after this game, not serious things but things that may require another day's rest for several guys, including Reuben Foster and Alphonse Taylor."

Taylor and Foster left Saturday's win at Arkansas with concussions.

Saban referred to the concussions as "little" and "minor" on Saturday and indicated the two were being held out of Monday practice as a precaution.

Saban did not reference running back Joshua Jacobs on Monday. Jacobs also left Saturday's game with an injury, but Saban told reporters after the win that Jacobs had been cleared to return in the second half.

Foster leads the Tide in total tackles with 37, and also has three quarterback hurries and 0.5 sacks. Before leaving Saturday's game, Foster had two tackles, including one for a loss and a pass breakup.

Fellow linebacker Shaun Dion Hamilton said Foster is "doing good. He's going to be ready to go."

Taylor sustained his concussion near the end of the first half.

Post-Test Questions

Vagias, Wade M. (2006). "Likert-type scale response anchors. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University

*The following Likert scale was revised to fit a five-point scale

Article #1

1) How is the injury to Alphonse Taylor portrayed in this article?

1 2 3 4 5

Extremely Important Moderately Important Neutral Low Importance Not Important

2) How does the author view the issue of head trauma/concussions in the article?

1 2 3 4 5

Extremely Important Moderately Important Neutral Low Importance Not Important

3) How does football player Alphonse Taylor view the issue of head trauma/concussions in the article?

1 2 3 4
5
Extremely Important Moderately Important Neutral Low Importance Not Important

4) How does the article make you view the issue of head trauma/concussions?
1 2 3 4
5
Extremely Important Moderately Important Neutral Low Importance Not Important

Article #2

1) How is the severity of the injury to Alphonse Taylor portrayed in this article?
1 2 3 4
5
Extremely Important Moderately Important Neutral Low Importance Not Important

2) How does the author view the issue of head trauma/concussions in the article?
1 2 3 4
5
Extremely Important Moderately Important Neutral Low Importance Not Important

3) How does football coach Nick Saban view the issue of head trauma/concussions in the article?
1 2 3 4
5
Extremely Important Moderately Important Neutral Low Importance Not Important

4) How does the article make you view the issue of head trauma/concussions?
1 2 3 4
5
Extremely Important Moderately Important Neutral Low Importance Not Important

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Post-Test Questions cont.

1) Do you consider yourself an athlete?
A) Athlete
B) Non-Athlete

2) Do you consider yourself a sports fan?
A) Yes
B) No

3) If so, what is your favorite sport?
Answer Here:

4) Gender
A) Male
B) Female

VITA

T. PARKER SCHWARTZ II

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