

A case analysis of the NFL's communication in response to the Concussion Crisis

The Fumbled NFL Concussion Crisis

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Image source: <http://www.nbcnews.com/news/us-news/first-time-nfl-acknowledges-link-between-football-brain-disorders-n538381>

Overview

The American Association of Neurological Surgeons defines concussions as “an injury to the brain that results in temporary loss of normal brain function” (AANS, Concussion). The AANS go on further to say that “athletes who suffer repeated concussions should consider ending participation in the sport” (AANS, Concussion).

The number of reported concussions suffered while playing football has steadily been rising in the past several years as this graphic from the Chicago Tribune shows. 2015 showed a 32% increase in reported concussions from the prior year.

| Year | Preseason | | | Regular Season | | | Preseason + Regular Season | | |
|------|-----------|------|-------|----------------|------|-------|----------------------------|------|-------|
| | Practice | Game | Total | Practice | Game | Total | Practice | Game | Total |
| 2012 | 42 | 43 | 85 | 3 | 173 | 176 | 45 | 216 | 261 |
| 2013 | 39 | 38 | 77 | 4 | 148 | 152 | 43 | 186 | 229 |
| 2014 | 42 | 41 | 83 | 8 | 115 | 123 | 50 | 156 | 206 |
| 2015 | 29 | 52 | 81 | 8 | 182 | 190 | 37 | 234 | 271 |

*Image Source: [http://www.chicagotribune.com/sports/football/ct-nfl-2015-injury-data-20160129-
htmlstory.html](http://www.chicagotribune.com/sports/football/ct-nfl-2015-injury-data-20160129-
htmlstory.html)*

The problem is that; these are only the reported concussions. In 1994 the NFL launched the MTBI (Mild Traumatic Brain Injury) Committee (Ezell 2013). The MTBI Committee, led by a New York Jets team doctor with no experience in brain science, was responsible for conducting research into the widespread problem facing the NFL. According the (Schwarz, Bogdanich, & Williams, 2016), the MTBI’s initial research project into brain injuries in the NFL omitted over 100 subjects “including some severe injuries to stars like quarterbacks Steve Young and Troy Aikman.” This was not even the beginning of the NFL’s unethical behavior regarding the concussion crisis.

The cover up of concussions in the NFL appeared to be institutionalized. A New York Times (2016) article points out two prominent holes in the research including multiple unreported concussions from the San Francisco 49ers and the Dallas Cowboys. The 49ers had three consecutive years with zero concussions reported and the Cowboys similarly had 6 consecutive years of no concussions. However, when one examines their midweek injury report, it tells a different tale. Both team's star quarterbacks, Steve Young and Troy Aikman, had suffered two and four concussions respectively.

Young listed on midweek N.F.L. injury reports

| | |
|----------------|------------|
| Sept. 3, 1997 | Concussion |
| Sept. 29, 1999 | Concussion |

Aikman listed on midweek N.F.L. injury reports

| | |
|---------------|------------|
| Oct. 29, 1997 | Concussion |
| Nov. 10, 1999 | Head* |
| Sept. 6, 2000 | Concussion |
| Dec. 13, 2000 | Concussion |

Images source: http://www.nytimes.com/2016/03/25/sports/football/nfl-concussion-research-tobacco.html?_r=2

History of the NFL¹

The history of the NFL begins all the way back in 1869 when Rutgers and Princeton played a college “soccer football game”. In the next several years, rugby gained popularity in the Northeast and the rules of modern football began. In 1895, John Brallier became the first professional football player when he accepted \$10 and expenses to play a match for the Latrobe YMCA in Pennsylvania.

¹ Historical Information Source: NFL History by Decade. (n.d.). Retrieved July 25, 2016, from <http://www.nfl.com/history/chronology/1869-1910>



Before Brallier, Pudge Heffelfinger became the first person to be paid in order to play football when he received \$500 for one game in 1892.

Image source: <http://www.nfl.com/history/chronology/1869-1910>

Fast forward to 1922, the American Professional Football Association changed its name to the National Football League. The 1922 version of the NFL fielded 18 teams, one of whom was sponsored by Oorang Dog Kennels, and the stars of the league included Jim Thorpe, Joe Guyon, and Guy Chamberlain. By the end of 1926, the NFL grew to 22 teams, including the New York Giants. However, the growth of the NFL was not a smooth road. In 1931, the NFL had decreased to 10 member teams and by 1940 a rival league, the American Football League, had 6 member teams.

The 1940's saw a handful of important changes to how the game was played. Hash-lines were moved from 15 yards away from edge of the field to the center of the field, which lead to more play styles more as plays originated from the center of the field and gave room to either sideline. An additional referee, the back judge, was added, bringing the total amount of officials to five. An even more important change was the introduction of unlimited substitutions in 1950. This rule change led to players having specialized positions on the field rather than players like Sammy Baugh, who led the NFL in passing, punting, and kicking all in the 1943 season.

The 1950's introduced some of the modern changes that we see in professional football today. The Los Angeles Rams were the first team to have every game of their season televised.

This was a major step in the exposure that the league would receive. The NFL began using plastic helmets, the NFL Players Association (NFLPA) was founded in 1956 and Vince Lombardi became head coach of the Green Bay Packers in 1959. All helmets prior to 1950 were made using leather. A timeline showing the progression of helmets used in the NFL is available in Appendix A.

The 1960's included a lot of advancement for the game of football, including the establishment of the Pro Football Hall of Fame in Canton, Ohio and the AFL and NFL had both signed multi-million-dollar television deals with CBS and NBC. The biggest change of the decade happened in 1966 when the AFL and NFL merged. This merger also led to the creation of the United States' biggest and most important sporting event, the Super Bowl. The following year, in 1967, Vince Lombardi and the Green Bay Packers won the inaugural Super Bowl.

The NFL became vastly popular in the 1970's as it garnered attention from across the nation. Orenthal James (O.J.) Simpson became the first NFL player to rush for more than 2,000 yards in one season, in 1973. In 1974 a multitude of rule changes were made in order to speed the game up and make it more appealing to fans; these changes included adjustments to the kickoff position, less yardage taken away on penalties, and restrictions on punt coverage to encourage more exciting plays. In 1977 the NFL had negotiated TV deals for every regular season, post-season game, and select pre-season games to be televised; by 1980, the Super Bowl had become immensely popular and was viewed in over 35 million homes.

By 1981 the NFL had already surpassed baseball in the hearts of American's as a poll by CBS and the New York Times showed that 48% of respondents preferred football and 31% preferred baseball. During the 1981 season, NFL games averaged over 60,000 people in attendance stadiums were on average filled to 93.8% of capacity. The following season in 1982

saw a strike from the NFLPA that lasted two months over concerns with the Collective Bargaining Agreement. The 1987 season saw another player's strike, but this time predominant players such as Joe Montana and Doug Flutie continued to play for their respective teams alongside replacement players that had temporarily been hired.

The 1990's were good for the NFL as they had gotten back on track with the positive progression of the league. In 1991 the NFL earned the top television rating spot for each week of the playoffs that season. The demand for NFL football was so great, it led to the creation of 'NFL Sunday Ticket' in 1993 which allowed satellite TV subscribers to watch every game played. According to the NFL's website, the NFL was the first major sports league to establish a website on the internet in 1995. The rest of the late 90's and 2000's saw continued growth for the NFL and the league changed hands from commissioner Paul Tagliabue to Roger Goodell in 2006.



Super Bowl 50 on 2/7/2016 had 167 million viewers and over 71,000 fans in attendance (Pallotta, Stelter 2016).

Image Source: <http://fiw.usatoday.com/2016/02/the-18-best-photos-from-super-bowl-50>

Background of Concussion Crisis and Chronic Traumatic Encephalopathy

The discovery of the concussion crisis began with the autopsy of Pittsburgh Steelers legend and Pro Football Hall of Famer, Mike Webster. Webster passed away in 2002 at the age

of 50 years old. Webster’s death initiated the need for further research into concussions because he was the first former player to be diagnosed with Chronic Traumatic Encephalopathy (CTE).

Mckee et al. (2012) define CTE as “(i) degeneration of lateral and ventral corticospinal tracts of the spinal cord; (ii) marked loss of anterior horn cells from cervical, thoracic and lumbar spinal cord with gliosis; and (iii) TDP-43 or pTDP-43 positive neuronal, glial, neuritic or intranuclear inclusions in anterior horn cells and white matter tracts of the spinal cord.”

“Symptoms in stage I chronic traumatic encephalopathy included headache and loss of attention and concentration. Additional symptoms in stage II included depression, explosivity and short-term memory loss. In stage III, executive dysfunction and cognitive impairment were found, and in stage IV, dementia, word-finding difficulty and aggression were characteristic” (Mckee et al. 2012).

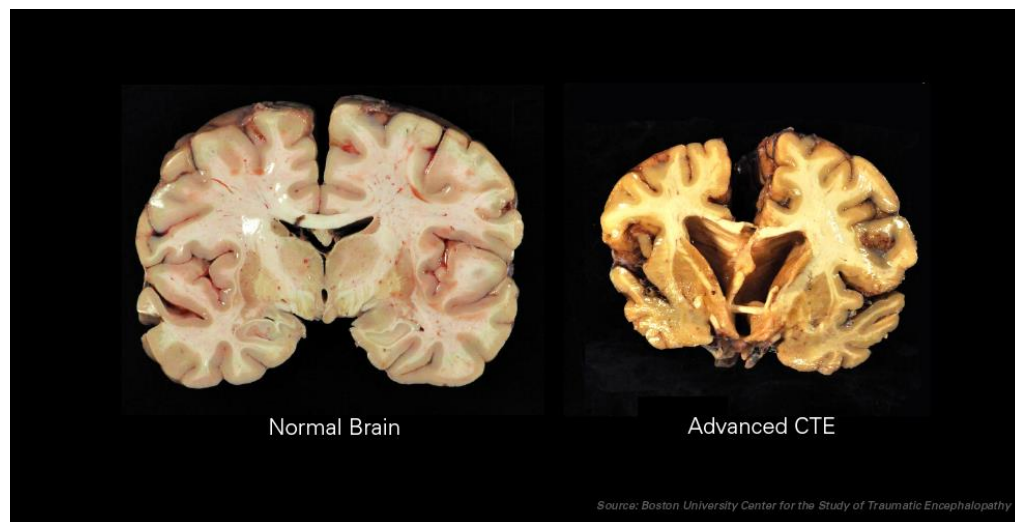


Image source: <http://www.pbs.org/wgbh/frontline/article/the-four-stages-of-cte/>

On April 11th, 2016 the American Academy of Neurology released the findings of their study, which had previously been embargoed, of the brains of 40 retired NFL players who averaged 7 years in the league. Over 40% of the brains examined showed evidence of Traumatic Brain Injury (TBI) and “about 50 percent had significant problems on executive function, 45

percent on learning or memory, 42 percent on attention and concentration, and 24 percent on spatial and perceptual function” (American Academy of Neurology, 2016).

Omalu et al. (2005) stated that “there are approximately 0.41 concussions per NFL game of American football.” If this statement is accurate, the concussion problem facing the NFL was much more serious than they had led the public to believe. Omalu et al. (2005) goes on state that “this case study by itself cannot confirm a causal link between professional football and CTE. However, it indicates the need for comprehensive cognitive and autopsy-based research on long-term postneurotraumatic sequelae of professional American football.”

Chris Nowinski, a former Harvard football player and WWE wrestler, partnered with Dr. Omalu and Dr. McKee as a liason to acquire the brains of former players. Nowinski, who has suffered a multitude of brain injuries throughout his career in both sports gave a simple plan to reduce the consequences of concussions. Nowinski stated in his book, *Head Games* (2007) “reducing both concussions and their negative consequences is daunting task. The simplest way to solve footballs concussions crisis is to prevent concussions from happening at all.”

Concussion Crisis Timeline (Key Events)

The timeline of the concussion crisis will be analyzed through the use of Chaos Theory. Chaos Theory breaks down events into bifurcation, which can be described as a catalyst event, and fractals, which can be described as self-repeating events that contribute to a crisis. Attractors are values, principles, and social assumptions that draw people together in pursuit of common goals (Sellnow & Seeger, 2013). Self-Organization pertains to reconstructive efforts taken by an organization in order to bring themselves out of the crisis and move forward.

The bifurcation event in this crisis occurred in 1952 when the New England Journal of Medicine published a study stating that any player who has suffered three concussions should

never play football again (Thorndike, 1952); Troy Aikman suffered 9 reported concussions during his playing career. The NFL ignored this journal article and did not even have a public response at the time. The rest of the events described in this timeline can be described as fractals that contributed to the concussion crisis.

In December of 1994, NFL commissioner Paul Tagliabue described the concussion issue facing the league as a “pack journalism issue” (Ezell, 2013). 1999 was a particularly bad year for the NFL facing this crisis; Mike Webster began his disability claims with the NFL for the dementia he was suffering from, Steve Young was knocked unconscious for 30 seconds during his last game as an NFL player, and the NFL’s MTBI committee claimed that brain injuries were minor and rare in the league (Ezell, 2013).

In 2000, two years before the death of Mike Webster, the NFL granted Webster disability payments due to his dementia and acknowledged that Webster’s disabilities were directly related to his time as a NFL football player (Kirk, Gilmore, & Wiser, 2013). This was the first time the NFL admitted the link between football and dementia. Dr. Bennet Omalu studied Mike Webster’s brain after he passed away which led to the first finding of CTE in a football player’s brain. When Dr. Omalu published his findings in *Neurosurgery*, a prominent medical journal, the NFL refuted his findings, demanded that Omalu retract the study, and accused Omalu of practicing voodoo instead of medicine (Kirk, Gilmore, & Wiser, 2013).

In November of 2003, Elliot Pellman, the head of the NFL MTBI Committee, sent Wayne Chrebet back into a regular season game after he had suffered concussion which made him lose consciousness (Keating, 2006). The following year, in 2004, the MTBI released another paper in *Neurology* stating that NFL players were less likely to suffer brain injuries

because the majority of players that would have been predisposed to them would not have made it this far [to the NFL] (Pellman et al., 2004).

In May of 2007 Dr. Ira Casson, the new MTBI Committee chair, earned the moniker, “Dr. No” due to his brief responses to questions regarding whether multiple head injuries to football players led to depression, dementia, early on set Alzheimer’s, or any long term mental problems (Appendix B). In June of 2007, the NFL held a meeting with every NFL team’s doctors and trainers as well as a handful of the leading neurosurgeons in the United States; Dr. Omalu was not invited to this meeting. Dr. Julian Bailes, who had partnered with Omalu in his research, attended the meeting and presented Omalu’s research which was met with much disdain and disagreement from those in attendance including the new head of the NFL concussion committee, Dr. Ira Casson.

The results of a 2009 study funded by the NFL showed that former NFL players are 19 times more likely to suffer from dementia (Weir, Jackson, Sonnega). Later that same year, the NFL finally announced that concussions had the potential for long-term effects on players (Schwarz, 2009).

One of the last major events of this ongoing crisis was the suit filed by former player, Ray Easterling, against the NFL. Easterling filed a lawsuit against the NFL in 2011 claiming that the league made a “‘concerted effort of deception and denial’ in its handling of the science of concussions and brain trauma” (Ezell, 2013). This lawsuit led to a class-action suit against the NFL in which over 4,500 other former players joined. In August of 2013, the NFL agreed to settle the lawsuit and pay \$765 million; although the NFL agreed to pay such a large sum of money, the league still did not admit liability (Belson, 2013).

Analysis of Organizational Strategy and Communication

This case study will be analyzing the organizational strategy and communication of the NFL by utilizing the Crises and Emergency Risk Communication (CERC) model as a lens.

During the precrisis phase the CERC model suggests that an organization utilize communication and campaigns to facilitate:

- *Monitoring and recognition of emerging risks*
- *General public understanding of risk*
- *Changes in behavior to reduce the likelihood of harm (self-efficacy).*
- *Specific warning messages regarding some imminent threat.*
- *Alliances and cooperation with agencies, organizations and groups.*
- *Development of consensual recommendations by experts and first responders*
(Sellnow & Seeger, 2013)

Throughout the pre-crisis phase, the NFL did not adhere to any of these guidelines and in most cases did the exact opposite. When Thorndike's (1952) study was published, the NFL paid no attention to it; by doing so, the NFL began its culture of keeping pertinent medical information away from its players and stakeholders. This stage of the CERC model also suggests partnering with groups that could help find a solution to a crisis and developing consensual recommendations by experts; instead, the NFL did their best to discredit any medical official who spoke to the dangers of brain injuries in football.

The CERC model suggests that after the initial event, the organization involved should rapidly communicate and establish "empathy, reassurance, and reduction in emotional turmoil" to the general public and affected groups (Sellnow & Seeger, 2013). After the initial event, in this case it was the discovery of CTE in the brain of Mike Webster, the NFL showed no remorse and sought to discredit Dr. Omalu by any means necessary. In addition to the NFL's attempts to discredit Dr. Omalu, the NFL commissioner, Paul Tagliabue, referred to the concussion crisis as a "pack journalism issue" (Ezell, 2013).

During the maintenance phase the CERC model suggests communication to publics and stakeholders in order to facilitate:

- *More accurate public understandings of ongoing risks.*
- *Understanding of background factors and issues.*
- *Broad-based support and cooperation with response and recovery efforts.*
- *Feedback from affected publics and correction of any misunderstandings/rumors.*
- *Ongoing explanation and reiteration of self-efficacy and personal response activities (how/where to get more information) begun in Stage II.*
- *Informed decision making by the public based on understanding of risks/benefits.*

(Sellnow & Seeger, 2013)

When analyzed through the CERC model, the NFL did not take the proper course of action through this phase either. The NFL began publishing a series of papers in *Neurology* that refuted all of the studies previously done. At this stage, the NFL should have been encouraging a culture of shared information rather than discrediting any medical doctor that stood in their way and actively attempting to keep them quiet. The maintenance phase of the CERC model also suggests the support and cooperation with response and recovery efforts; one could say that the class action lawsuit taken against the NFL was a recovery effort on the part of the retired and ailing players. In order to settle this lawsuit, the NFL paid a sum of \$765 million but the league showed little to no remorse, did not accept liability, and did not even acknowledge that the man who began the lawsuit, Ray Easterling, committed suicide before they settled most likely due to his struggle with CTE.

The fourth stage of the CERC model is the resolution phase; for the purposes of this analysis, it will be the final phase due to the concussion crisis not being entirely over so it cannot be properly evaluated in the fifth and final stage. According Sellnow and Seeger (2013), the CERC model recommends the following during the resolution stage:

- *Inform and persuade about ongoing clean-up, remediation, recovery and rebuilding efforts.*

- *Facilitate broad-based, honest, and open discussion and resolution of issues regarding cause, blame, responsibility and adequacy of response.*
- *Improve/create public understanding of new risks and new understandings of risk as well as new risk avoidance behaviors and response procedures.*
- *Promote the activities and capabilities of agencies and organizations to reinforce positive corporate identity and image.*

The NFL's actions during the resolution stage could be viewed as more in-line with the CERC model although their efforts have been criticized "shameless" and all about profit (Fainaru & Fainaru-Wade, 2014). The main feature of the NFL's resolution efforts was the creation of the "Heads Up Football" program. The Heads Up program is a project by USA Football designed to educate youth and high school football coaches about proper tackling, blocking, and injury recognition techniques (Appendix C). In a promotional video for Heads Up Football, NFL commissioner, Roger Goodell, is quoted stating that "What we're trying to do is change the culture of football, to more of a culture of safety -- to understand that we want to teach them the proper way to play the game" (Fainaru & Fainaru-Wade, 2014).

Former NFL player, Nate Jackson, described the Heads Up program as "'a product that the NFL is selling' to 'create the illusion that the game is safe or can be made safe.' The tackling techniques are 'laughable,' he said, when applied to game and practice situations, with players moving at high speeds and colliding from different angles with their heads" (Fainaru & Fainaru-Wade, 2014).

The Heads Up program, appears to aid the NFL's cause but only at a glimpse. The Heads Up Program only cost \$25 and a couple hours of online lessons in order to become certified. While the efforts to make the game safer at the youth level appear to be genuine on the part of the NFL, there is a lack of substance.

Although the NFL's promotion of the Heads Up program has been scrutinized by many stakeholders, they have made genuine efforts to make the game less susceptible to brain injuries through rule changes over the past several years. These rule changes include:

- Potential ejections for players that attempt to spear an opponent with their helmet
- Multiple rules to protect quarterbacks including a penalty for helmet-to-helmet hits
- No helmet-to-helmet hits on kickers and punters
- No hits to a "defenseless" player's head or neck
- Kickoff yard line moved to increase touchbacks (Most injuries occur on a kickoff play due to both teams running at each other from opposite ends of the field with full momentum)
 - o Running start for the kickoff team's players is limited to 5 yards, previously players could have a 15-20 yard running start.
- Elimination of returning team on kickoff creating a wedge of 2 or more players to protect ball carrier
- The play is marked dead at the spot if the ball carrier's helmet comes off (Health & Safety Rule Changes, NFL)

These rule changes do not mark the end of the concussion crisis but they do pave the way for a game that stakeholders can still love while attempting to limit the damage to a participant's brain.

Stakeholder Response and Impact

The NFL's concussion crisis has affected and continues affect multiple stakeholder groups. These stakeholder groups not only include the former players that were previously unaware of this occupational hazard but their friends and family as well. The parents of potential youth football players are also a key stakeholder group in this crisis. As Dr. Omalu stated in *The League of Denial* (, he was told by an NFL executive that if just 10% of mothers decided to pull their children out of football due to fear of concussions, the game would be over as we know it (Kirk, Gilmore, & Wiser, 2013). The next stakeholder group would be every business involved with the game of football; the teams, arenas, cities, sponsors, and any other company involved

could stand to lose a significant amount of money if America's most popular sport were to no longer exist.

The independent and dependent variables of the Situational Theory of Problem Solving vary greatly across the board with these groups. The Situational Theory of Problem Solving has its roots based in the Situational Theory of Publics that posits stakeholder groups will “communicate actively, passively, or not at all about organizational decision” depending on the amplitude of their variables (Grunig, 2005).

This analysis will focus on the former and current players as the primary stakeholder group. The reason for this analysis focusing the players is due to the crisis affecting them and their lives the most. The legitimacy gap and problem recognition of this crisis are tied very closely to each other. Kim & Grunig (2011) define problem recognition as “one's perception that something is missing and that there is no immediately applicable solution to it.” When it was discovered that Mike Webster and many other former players all were diagnosed with CTE, it became evident that there was a problem. The legitimacy gap grew larger everyday as the NFL continued to refute scientific papers and deny responsibility for damage to the mental health of their former players.

The involvement recognition is certainly highest amongst the former and current players. The football players are the ones putting themselves through the rigorous beating of the game but they were previously unaware of what could happen to their brains after their career is over.

Currently players are aware of what could happen to the health of their brain throughout their career but I believe the key variable that keeps them playing is the constraint recognition. Constraint recognition has its roots in economics and management; while these players are aware of the risks involved with the game, they feel constrained to keep playing because it is their

source of income and sitting out on the job could be detrimental to future contracts (Kim & Grunig, 2011).

A major event in the concussion crisis was the \$765-million-dollar settlement of the class-action lawsuit against the NFL. This lawsuit was the action that the players took after considering the problem, involvement, and constraint recognitions. Ray Easterling's initial lawsuit was the product of referent criterion. Kim & Grunig (2011) describe referent criterion as "any knowledge or subjective judgmental system that influences the way in which one approaches problem solving." Easterling knew what the NFL did was wrong as they systematically hid information from players that was vital to their health. This led to the lawsuit against the NFL and its garnering of class-action status when over 4,500 other former players joined as well.

Summary & Recommendations & Ongoing Challenges

In order to analyze the ongoing challenges and provide recommendations for the future of the NFL, I will be utilizing Situational Crisis Communication Theory (SCCT). The NFL's initial response to the concussion crisis is not line with SCCT at all. SCCT calls for an ethical response to crises in which "the first priority... is to protect stakeholders from harm, not to protect the reputation [of the organization]" (Coombs, 2007). SCCT has its roots in Attribution Theory; "a person attributes responsibility for an event and will experience an emotional reaction to the event" (Coombs, 2007). If the NFL had acknowledged what was going with brain injuries from the start, then the blame for all the pain these formers players suffered through could have been attributed to the game and not the NFL's decades of lies to cover it up. These actions place the NFL in the preventable crisis cluster instead of accidental or victim due to the NFL systematically placing their stakeholders in life-threatening risk.

This crisis has certainly put a large dent in the NFL's organizational reputation; moving forward, I would suggest they follow Coombs' best practices for crisis management and communications (2007, October 30). Included in these best practices are strategies for post-crisis communication and reputation repair.

The cause of the concussion crisis has already been attributed by stakeholders to the NFL; I believe this requires that they take the apology route for the future. In order to save money, the NFL settled their class-action lawsuit out of court but refused to accept liability. The compensation half of the settlement is in line with Coombs' (2007, October 30) best practices but in order to protect themselves from further lawsuits, the NFL will not likely be making any apology or acceptance of liability.

For all future issues and crises, I would recommend the NFL follow Coombs' (October, 30 2007) best practices for post-crisis communication in order to improve their reputation and ensure another preventable crisis does not occur. These practices include:

- 1. Deliver all information promised to stakeholders as soon as that information is known.*
 - 2. Keep stakeholders updated on the progression of recovery efforts including any corrective measures being taken and progress of investigations.*
 - 3. Analyze the crisis management effort for lessons in to the organizations crisis management system.*
- (Coombs, 2007, October 30).

Appendices

Appendix A:



Image source: <http://www.nfl.com/news/story/0ap1000000095139/article/history-of-the-nfl-football-helmet>

Appendix B: Ira Casson - No, No, No. (2007, May 14). Retrieved from https://www.youtube.com/watch?v=R4NbU_HaB3Y

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- + Coaching Certification

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- + Heat Preparedness & Hydration
- + Sudden Cardiac Arrest
- + Proper Equipment Fitting
- + Heads Up Tackling*
- + Heads Up Blocking*

References

- AANS. (n.d.). Concussion. Retrieved from [http://www.aans.org/patient information/conditions and treatments/concussion.aspx](http://www.aans.org/patient%20information/conditions%20and%20treatments/concussion.aspx)
- American Academy of Neurology. (2016, April 11). *Study: More than 40 Percent of Retired NFL Players Had Brain Injury* [Press release]. American Academy of Neurology. Retrieved from <https://www.aan.com/PressRoom/Home/PressRelease/1453>
- Belson, K. (2013, August 29). N.F.L. Agrees to Settle Concussion Suit for \$765 Million. Retrieved from <http://www.nytimes.com/2013/08/30/sports/football/judge-announces-settlement-in-nfl-concussion-suit.html?action=click>
- Coombs, W. T. (2007). Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory. *Corp Reputation Rev Corporate Reputation Review*, 10(3), 163-176. doi:10.1057/palgrave.crr.1550049
- Coombs, W. (2007, October 30). Crisis Management and Communications. Retrieved from <http://www.instituteforpr.org/crisis-management-and-communications/>
- Ezell, L. (2013, October 8). Timeline: The NFL's Concussion Crisis. Retrieved July 21, 2016, from <http://www.pbs.org/wgbh/pages/frontline/sports/league-of-denial/timeline-the-nfls-concussion-crisis>
- Fainaru, S., & Fainaru-Wade, M. (2014, January 13). OTL: NFL Youth Tackling Program in Question. Retrieved from http://www.espn.com/espn/otl/story/_/id/10276129/popular-nfl-backed-heads-tackling-method-questioned-former-players
- Health & Safety Rules Changes. (n.d.). Retrieved from <http://operations.nfl.com/football-ops/league-governance/health-safety-rules-changes/>
- Keating, P. (2006, November 6). Elliot Pellman says it's okay to play in the NFL after suffering a concussion. Retrieved from <http://www.espn.com/espnmag/story?id=3644940>
- Kim, J., & Grunig, J. E. (2011). Problem Solving and Communicative Action: A Situational Theory of Problem Solving. *Journal of Communication*, 61(1), 120-149. doi:10.1111/j.1460-2466.2010.01529.x
- Kirk, M., Gilmore, J., & Wisner, M. (Producers). (2013, October 8). *League of Denial: The NFL's Concussion Crisis* [Video file]. In PBS. Retrieved from <http://www.pbs.org/wgbh/frontline/film/league-of-denial/>
- Mckee, A. C., Stein, T. D., Nowinski, C. J., Stern, R. A., Daneshvar, D. H., Alvarez, V. E., . . . Cantu, R. C. (2012). The spectrum of disease in chronic traumatic encephalopathy. *Brain*, 136(1), 43-64. doi:10.1093/brain/aws307

- NFL History by Decade. (n.d.). Retrieved July 23, 2016, from <http://www.nfl.com/history/chronology/1869-1910>
- Nowinski, C., & Ventura, J. (2007). *Head games: Football's concussion crisis from the NFL to youth leagues*. East Bridgewater, MA: Drummond Pub. Group.
- Pallotta, F., & Stelter, B. (2016, February 8). Super Bowl 50 audience is third largest in TV history. Retrieved from <http://money.cnn.com/2016/02/08/media/super-bowl-50-ratings/>
- Pellman, E. J., Viano, D. C., Casson, I. R., Arfken, C., & Powell, J. (2004). Concussion in Professional Football: Injuries Involving 7 or More Days Out—Part 5. *Neurosurgery*, 55(5), 1100-1119. doi:10.1227/01.neu.0000147063.12873.f5
- Sellnow, T. L., & Seeger, M. W. (2013). *Theorizing Crisis Communication* (1st ed.). Wiley-Blackwell.
- Schwarz, A., Bogdanich, W., & Williams, J. (2016, March 24). N.F.L.'s Flawed Concussion Research and Ties to Tobacco Industry. Retrieved July 25, 2016, from <http://www.nytimes.com/2016/03/25/sports/football/nfl-concussion-research-tobacco.html? r=2>
- Schwarz, A. (2009). N.F.L. Acknowledges Long-Term Concussion Effects. Retrieved from <http://www.nytimes.com/2009/12/21/sports/football/21concussions.html?pagewanted=all>
- Thorndike, A. (1952). Serious Recurrent Injuries of Athletes. *New England Journal of Medicine N Engl J Med*, 247(15), 554-556. doi:10.1056/nejm195210092471504
- Weir, D. R., Jackson, J. S., & Sonnega, A. (2009, September 10). Study of Retired NFL Players. *Institute for Social Research: University of Michigan*.