

Concussion, Cagney, Captains of the Clouds

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ABSTRACT: The case of James Cagney adds interesting details to the history of concussion. It is underappreciated that a movie-star of Cagney's stature incurred multiple concussions over many years. Moreover, the fact that he sustained one of these concussions in Canada while filming *Captains of the Clouds*, a major Hollywood film, is essentially unknown, and was seldom discussed by Cagney despite his willingness to discuss his many other concussions. The scene showing this concussion was left in the final released version of the movie, making it one of the earliest filmed concussions and the first concussion ever filmed in Technicolor.

RÉSUMÉ: James Cagney a souffert d'une commotion cérébrale au cours du tournage de *Captain of the Clouds*. La carrière de l'acteur James Cagney permet d'ajouter des détails intéressants à l'histoire des commotions cérébrales. En effet, on néglige trop souvent le fait que Cagney, grande vedette du cinéma, a subi maintes commotions cérébrales au cours de ses nombreux tournages. De plus, le fait qu'il ait été victime d'une de ces commotions au Canada pendant la réalisation de *Captains of the Clouds*, alors une importante production hollywoodienne, demeure pour l'essentiel un fait inconnu que l'acteur a rarement abordé en dépit de sa propension à évoquer ses nombreuses autres commotions cérébrales. La scène où il est victime de son accident ne fut pas retirée de la version finale de *Captains of the Clouds*, ce qui en fait l'une des premières où une commotion cérébrale fut filmée, de surcroît la première filmée en Technicolor.

Keywords: Brain injury, Traumatic, History

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Concussions are common. People who are willing to publicly discuss their concussions are less common. Apart from some notable exceptions (e.g., some modern-day actors who are eager to publicly discuss their concussions and present them as a "badge of honour" reflecting their commitment to the role¹), the general reticence to discuss personal concussions is an ongoing problem despite our expanded understanding over the past 10-20 years of the consequences of mild traumatic brain injuries.

Concussion is a clinical syndrome of biomechanically induced altered brain function, typically affecting memory and orientation, which may involve loss of consciousness.² Regrettably, concussions affect millions of people. Given the long-term consequences of repeated concussions, including an increased susceptibility to dementia, it is imperative that we improve our understanding of the natural history and epidemiology of concussion. One of the major hurdles in achieving this goal is the underreporting of concussions.³ Various factors relevant to such underreporting include the concussed person's concerns that they will be perceived as injured and will have to contend with the financial consequences or even job loss.⁴ Although an understudied phenomenon, concussion underreporting is a significant issue requiring further study.

One area of underreporting that has not been discussed is a willingness to selectively discuss some concussions, but not others, by an individual with a multiple concussion history. The historical case study of James Cagney exemplifies such a situation, while adding interesting details about one of the first major concussed celebrities.

CASE HISTORY

1899-1940

James Cagney was born in New York City in 1899; he graduated from high school in 1918, subsequently entering Columbia University, but withdrew after one semester to support his siblings following the death of their father. Giving his earnings to his family, Cagney held a variety of menial jobs, often multiple occupations simultaneously.

In pursuit of improved financial stability, Cagney next considered boxing as a means of raising money. As a teenager he had become a frequent street fighter, participating in multiple brawls. In his authorized biography *Cagney*,⁵ Cagney describes one such street fight: "As I went in swinging, out of the darkness came a brick, and it caught me in the left side. I dropped to me knees and stayed there. I managed to crawl to the curb and was violently sick." He goes on to describe another brawl some months later: "He hit me on the mouth and cooled me. My head hit the wall and I went down." In his autobiography *Cagney by Cagney*,⁶ yet another street fight is described: "He replied with a beautiful right that caught me over the left eye. My head flipped back and I saw a

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spectacular flash of yellow light.” Emboldened by his street fighting prowess, Cagney increasingly engaged in amateur boxing, and was a runner-up for the New York State lightweight title. His coaches encouraged him to turn professional to ensure improved paydays, but his mother would not permit it—and Cagney wisely decided to respect his mother’s wishes.

Needing more money, Cagney next drifted into acting. Through the 1920s, typically out of work and money, he attended many casting calls. In 1930, he played a cowardly killer in the Broadway melodrama *Penny Arcade*. Hoping to capitalize on the success of this show, Warner Brothers Inc. moved Cagney to Hollywood transforming *Penny Arcade* into *Sinner’s Holiday*—Cagney’s first film. Within one year he became the screen’s top mobster in 1931’s *The Public Enemy*, which was followed by a popular series of gangster movies. He also starred in several boxing movies (*Winner Take All*, *City for Conquest*), later complaining in his autobiography about the headaches he would suffer from concussions sustained during the realistic fight scenes in these movies. However, despite these concussions and headaches, he was always on set the next day. By the end of the 1930s, Cagney was one of Hollywood’s leading men, and when World War II broke out in late 1939, he was well positioned to star in patriotic films. *Captains of the Clouds* was such a film.

Summer 1941

In the spring of 1941 work began on *Captains of the Clouds*—an American-Canadian war movie in which Cagney plays Brian MacLean, a fictional Canadian bush-pilot working in rugged Northern Ontario at the onset of World War II. After hearing Churchill’s “We shall fight on the beaches” speech on the radio, MacLean enlists in the Royal Canadian Air Force, but being too old for active combat ends up as a ferry pilot shuttling bombers to Britain, ultimately sacrificing his life to save his colleagues from a Luftwaffe fighter plane.

For authenticity, the bush-pilot scenes were filmed on Trout Lake in North Bay, Ontario, Canada.⁷ On August 1, 1941, a scene was being filmed in which Cagney is supposedly toppled into the lake by a whirling propeller blade. Feeling impatient and wanting to live up to his image, he eschewed the need for a stunt double, performing his own stunt. Cagney fell off of the airplane’s pontoon as directed, but accidentally struck his head sustaining a significant concussion.⁷ A local man, watching from the spectator’s area, described it as follows (personal communication from RBH who, in August 1941, was a 23-year-old airplane fuselage mechanic watching the filming of *Captains of the Clouds* from a spectator zone. He described his observations of Cagney’s concussion to DFW on December 22, 1978): “At first I thought it was great acting, but then I realized something had gone wrong. The camera crew was suddenly quite worried and someone dove into the lake to help Cagney. It was clear he had genuinely hit his head, with quite a force, and apparently had been knocked out ... briefly. It seems he had struck his head not once but twice against the large metal pontoon on the Mark I Noorduyn Norseman aircraft. He was supposed to use his arms to break the fall, which he managed to do, but then really did hit his head a second time seemingly on a submerged portion of the pontoon as he fell into the lake. He appeared rather wobbly and required assistance when he came out of the water.”

Needing to recover from his concussion, Cagney for the first time in his movie career uncharacteristically took time off to rest, putting the 10-day shoot at North Bay behind schedule.⁸ When he did return to filming, it was felt that he was now disinterested and he appeared to *ad lib* his lines. He was accused of slipping into an American gangster accent, which was not compatible with playing a Canadian bush-pilot. Filming on *Captains of the Clouds* ended in September.

Captains of the Clouds was in theatres shortly thereafter. The head trauma scene was left in the final version of the film, although slightly edited. The above and below water level “double hit” described by the witness is not apparent, but in slow motion one can see Cagney’s face contort as his head strikes the aircraft pontoon, testifying to the force of the impact, subsequently followed by a suggestion of tonic posturing of his right more than left upper extremity as he commences his fall into the lake. This scene capturing a real-life concussion sustained by a major Hollywood actor is one of the earliest filmed concussions (in a non-athlete) and the first concussion ever recorded in Technicolor.

Autumn 1941

Within months of competing filming of *Captains of the Clouds*, Cagney had started work on his next film. *Yankee Doodle Dandy* began filming in December 1941, within 24 hours of the Pearl Harbor attack. *Yankee Doodle Dandy* is an extremely patriotic biographical musical film about George M. Cohan, an American entertainer, singer and dancer. Cagney’s leading man performance was engaged, innovative and explosively energetic, involving many physically-demanding boisterous dance sequences and a spontaneously improvised scene in which he rather dangerously tap dances down a marble staircase within the White House. In May 1942, Bosley Crowther in a *New York Times* review wrote: “Mr. Cagney excels, both in characterization and jubilant song and dance with a buoyant performance that glows with energy.”⁹ Cagney won the 1942 Best Actor Academy Award for his performance.

1942-1986

Having already starred in 39 films from 1930 to 1942, Cagney made only another 22 films before retiring. In his later films, he gave notable performances in movies such as *White Heat* and *Love Me or Leave Me*. In retirement, Cagney wrote his autobiography and gave occasional interviews discussing his boxing concussions but never his August 1, 1941 concussion; he also wrote verse, played classical guitar and painted, becoming an accomplished artist. Interestingly, his most noteworthy painting is *The Victor*—a disturbingly grotesque yet compassionate painting of a neurologically devastated punch-drunk prize fighter. Suffering from diabetes, hypertension and multiple strokes that left him wheelchair-bound, Cagney’s health deteriorated substantially after 1979. He died of a heart attack in 1986 without any reported evidence of dementia—a significant observation given the relationship between multiple concussions and the risk of dementia. His obituary in the *New York Times* hailed him as “a master of pugnaeous grace”.¹⁰

DISCUSSION

Concussion as a medical condition was described more than 1000 years ago during the Early Middle Ages by the Persian physician Abu Bakr Mohammad Ibn Zakariya Razi (865-925 A.D.) who regarded it as a “commotion of the brain” (*commotio cerebri*) manifesting as an abnormal transient state.¹¹ Two centuries later, the medieval Italian surgeon Guido Lanfranchi (1250-1306) conceptually extended this work differentiating between *commotio cerebri* and *contusio cerebri*, the latter involving a demonstrable brain lesion.¹² The French surgeon Guy de Chauliac (1300-1368) reached similar conclusions, noting that *commotio cerebri* had a better prognosis than *contusio cerebri* involving skull injury.¹³ During the Burgundian Wars (1474-1477), the German surgeon Hieronymus Brunschwig (1450-1512) published some of the first studies on battlefield-acquired closed head injuries.¹⁴ Another battlefield physician, Ambroise Paré (1510-1590), the most famous French surgeon of the Renaissance, coined the diagnostic term *embranlement* (based on the verb “to shake”, from an *ancien français* dialect spoken in Northern France before the 15th century) reflecting his understanding that this disorder was caused by abnormal brain motion.¹⁵ However, by the mid-1600s, the Venetian physician Petri de Marchetti was popularizing the term concussion (from the Latin verb *concutere* [to shake]) in preference to *commotio cerebri* or *embranlement*.¹⁶

During the 1700 and 1800s, concussion moved beyond the naming and definition stage to improved attempts at a mechanistic understanding.^{17,18} During these two centuries, multiple hypotheses were put forth, including circulatory failure, acute compressive anaemia, diffuse tissue vibration and nerve cell shock.¹⁹ These mechanistic understandings were greatly advanced during the 1900s and 2000s, regrettably due to tragedies on both the battlefield and the playing field. During World War I, “shell shock” first appeared in *The Lancet* in an article in which Capt. Charles Myers of the Royal Army Medical Corps observed altered vision, loss of smell and loss of memory and attributed these symptoms to “commotional” brain damage related to the severe concussive motion of the shaken cerebrum in the soldier’s skull.²⁰ In 1928, the term dementia pugilistica was coined by H.S. Martland to describe long-term consequences of repeated concussions.²¹ During World War II, significant advances were made in understanding the role of rotational brain movement in the pathogenesis of concussion.^{22,23} In 1949, British neurologist Macdonald Critchley wrote a paper titled, “Punch-drunk syndromes: the chronic traumatic encephalopathy of boxers”, introducing the concept of chronic traumatic encephalopathy.²⁴ In the early 2000s, neuropathologist Bennet Omalu working on the case of American football player Mike Webster, published his findings “Chronic Traumatic Encephalopathy in a National Football League Player” in the journal *Neurosurgery*.²⁵ Since then, the history of concussion has been increasingly characterized by the ever-lengthening list of notable people, mostly athletes, who have sustained concussions.²⁶

Beyond simply adding another celebrity name to the roster of the concussed, the story of James Cagney adds interesting details to the history of concussion. It is underappreciated that a major movie-star of Cagney’s stature had incurred multiple concussions. Moreover, the fact that he sustained one of these concussions while filming a major Hollywood film is essentially unknown. Despite objections from the movie’s technical advisor who asserted that no competent bush-pilot would exit his aircraft whilst

the propeller was still spinning, the scene was left in the released version of the movie, making it one of the earliest filmed concussions (in a non-athlete) and the first concussion ever filmed in Technicolor.⁷ It is also remarkable that Cagney went from a concussion that temporarily diminished his acting abilities to an energetic academy award winning role within 4 months—he then went on to complete an illustrious and successful acting career without any evidence of dementia, despite having sustained multiple concussions throughout his life.

Next, there is the curious issue of Cagney’s selective recall in recounting his various concussions. In his autobiography⁶ and in the many interviews given throughout his life, he makes frequent detailed references to his multiple concussions during street fights as a youth and in his boxing movies; however, he does not discuss what seems to be the most significant concussion of his life—the one of August 1, 1941. Although speculative, it is interesting to suggest that his boxing concussions support his image as a screen tough guy, whereas the 1941 concussion arose from carelessness and an accident that he would prefer not to have associated with his image—and for movie-stars, image is important. In our current image-obsessed social media-driven society, it is probable that the self-reporting of concussions, especially by celebrities or their spokespersons, may be stage-managed by the need for image cultivation.

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CONFLICTS OF INTEREST

DW reports no conflict of interest. This paper was conceived and written entirely by DW.

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