The Death and Rebirth of Gaming: The American Video Game Industry from the 1980s-1994

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Introduction

DOOM 3D is one of the most coveted creations in the video game industry- a true masterwork. It ranks third on the Times Best 50 Games of All Time List .[1] Published in late 1993, the game made numerous innovations that propelled the first-person shooter genre forward. Despite the importance of *DOOM,* no one has devoted sufficient attention to the years that lead to its creation. In the late 1970s and 1980s the video game industry experienced nothing short of a fluctuating infancy. The arcade era saw rise to a specific type of product, arcade machines played in businesses and institutions. As technology developed and consumer interest changed, the home console burst onto the scene and made a significant impact on the American market by the end of the 1970s. The industry would experience a sudden crash in 1983, only to rise again in the late 80s due to Nintendo's entrance into the American game market. Soon after, *DOOM* ushered in a new era for the video game industry, one where home consoles and computers competed with each other and developers' creativity flourished. These seemingly disjunct events had significant connections between them that produced a particular culture that allowed for the creation of *DOOM.* Not only are these events fascinating when viewed in light of one another, but provide insights and lessons for the contemporary video game industry.

My argument can be viewed as four distinct theses that work with one another to create a framework to understand the 1980s. First, I argue that the coin-op system developed in the late arcade era was not only crucial in the Great Video Game Crash of 1983, but vital for the rise of third-party developers. The stringent corporate culture of the coin-op system pushed developers towards the increased potential for creative work in the computer gaming realm. Second, the

[1]Alex Fitzpatrick, John P. Cullen etc-al, “The 50 Bestt Video Game of All Time” Time Magazine Website, 2002. https://time.com/4458554/best-video-games-all-time/.

computer game industry survived the 1983 crash, seeing computer technology improve and computer prices dropp, all the while giving developers a space to allow their creative minds to flourish. The nominal survival of the computer game industry in the mid 1980s forged a design culture that helps explain game publishing studios like ID Software. Third, the American market saw a rebirth in video gaming generally in large part to Nintendo's investment in the industry just after the 1983 crash. Contrary to other works, I argue that this was not so much due to competition with SEGA, but Nintendo's rights to many games that were lost during the crash and devotion to making quality games. As such, video games popularity sky rocked at the same time that the home computer industry was steadily growing and embracing increased levels of creativity. Fourth, violence and video games were becoming a significant issue for American consumers, as action-oriented games were driving technology forward. *DOOM* demonstrates how action oriented games were driving developers to make innovative new game engines and implement new game design. These four arguments do not wholly explain the decade, but provide a framework to begin to understand these interconnected events. The purpose of *DOOM* is to provide an endpoint to these events, while the production of the game exemplifies the particular culture that the game industry created in the 1980s.

In 2015 co-founder of ID Software John Romero gave an interview to Motherboard reflecting on his time designing *DOOM*. He was let go from the company in the 1990s because John Carmack believed he was "not working hard enough".[2] Perhaps this is true, but his approach to gaming seems to be the product of the fluctuating circumstances of the video game industry in the 1980s. Romero recounts a story where his brother and friend took him to a

[2] Bone, *John Carmack Archive- Interviews,* 1997, https://fabiensanglard.net/fd_proxy/doom3/pdfs/johnc-interviews.pdf.

computer lounge where they played games on the systems, opposed to going to an arcade. Romero says "[...] the stuff in the arcade, that was aliens who made those games- who knows how those were made. But these (computer games) were a thing I could see. [...] in 1982 we got an Apple 2+ at the house and I was done going outside-it was over. I then spent all my time learning how to program, like all of it [...]".[3] Romero's rise to video game infamy as a co-creator of one of the most important games of all time is a story of the 1980s. It is defined by designers who found creative freedom in the home computer space. It is a story that historians must explore.

Historiographical Landscape

Video games currently occupy an awkward position in historical studies, as some periods are entirely neglected, while others have received mild attention. In contrast to scholarly evaluations, video games have received immense attention from popular publications, especially on the history of the industry. Author Blake J. Harris gives an insightful antidote that exemplifies the state of video game scholarship. In Talks At Google Harris shared a story where he went to his local Barnes and Noble looking for books on the battle between Sega and Nintendo. He found that Barnes and Noble did not have a video game history section and only one book had been published on the Sega vs. Nintendo phenomenon**.** Six years later histories of video games have experienced some growth, but not substantially from the time of Harris' talk.[4] My entrance into the historiographical landscape of video games is difficult because of the lack of

[3] Motherboard, "Meet John Romero: One of the Godfathers of the First-Person Shooter" (video),2015. https://www.youtube.com/watch?v=9v_0HD7iOz4.
[4] Talks at Google, "Console Wars: Sega, Nintendo, and the Battle that Defined a Generation" (lecture) posted July 11, 2014. https://www.youtube.com/watch?v=mDlhclXHZF0

conversation between scholars that Harris describes. There are, however, some attempts to engage in history of the 1970, early 1980s and late 1980s that are useful to guide and position my project. They establish a rudimentary historical conversation, while leaving a significant gap between events. As such, my project reconciles texts that describe different parts of the video games in the 1980s to create a more coherent focus and begin to generate a conversation between scholars.

Blake J. Harris' book *Console Wars* is a foundational text for scholars interested in video game history from the 1980s and 1990s. As mentioned above, Harris embarked on this project without many other guiding texts or examples to work from. The book is centrally focused on interviews conducted by Harris over the course of multiple years. It reads as a series of narratives that give insight into the specific relations that produced business decisions in the competition between Nintendo and Sega. There are many limitations for this text as a historical work. First, Harris is not a historian, although he does employ some historical methodologies. There is not a keen awareness for how sources outside narrative-based interviews could have contributed to this story. The book is far too heavily entrenched in its interviews, making many chapters feel drawn out without a clear purpose. While some accounts are useful as evidence for my work, it is limited in my usage in the broader historiographical landscape. Nonetheless, it would be disingenuous to write a paper about video game history in the 1980s and 1990s and not mention Harris' book.

Console Wars was inspired by David Sheff's *Game Over* which chronicled the rise of Nintendo through the late 1980s and early 1990s. Sheff is not a historian either, but is not restricted by the strict narrative basis of *Console Wars.* The book discusses larger social and

economic themes that lead to the rise of Nintendo, while including some narrative and discussion of specific actors. The chapters have a significant amount of variety as to their scope and focus, some of which are broader and deal with technological subjects, while others focus on figures from Nintendo. Sheff's methodology is useful for my own work as they effectively balance a source base that allows for more coherent explanations of video game history. As with Harris, many parts of this book provide useful information for my own project, but also a useful methodological basis.

For all that Sheff and Harris provide, this project is guided by John Will's "Pixel Cowboys and Silicon Gold Mines." Wills is a historian and this was published in the Pacific History Journal, providing my project with the strongest methodological grounding. Within the article and footnotes, Wills articulates many of the problems that my project faces. A study of video game history is fundamentally an unorthodox historical study, often relying on unique primary sources that some scholars would be skeptical of. Further, Wills mentions how there has not been a serious engagement with video games by historians, but gives an indication to how historians can use popular publications to guide their work. Wills heavily relies on video games themselves as their primary source base, given that "Pixel Cowboys and Silicon Gold Mines" is a study on representation. Thus, its contents and primary source base is not of use for my project. It is, however, vital for how I approach my source base and use popular histories.[5]

David Kushner's *Master of Doom* is another case study into the history of video games written by a non-historian. Kushner writes on the history of ID Software by evaluating John Romero and John Carmack, two of the most important figures in the video industry in the early

[5] John Wills, "Pixel Cowboys and Silicon Gold Mines: Videogames of the American West" *Pacific Historical Review* 77, no. 2 (2008): 273-303.doi:10.1525/phr.2008.77.2.273.

1990s. The book discusses both all the way back to their childhood, tracking their first interests and passions with computer programming and video games.[6] Each chapter is an intense focus on both of their involvement with ID Software, eventually discussing their split from the company. Kushner tells this history based on interviews they collected over the course of many years, including those with Romero and Carmack. Kushner is able to effectively present the case of DOOM through two key players without getting entirely lost in detail. Further, this book has the most comprehensive endnotes of any book referenced in this work.

Brian R. Eddy's *Classic Video Games: The Golden Age 1971-1984* is one of the most useful comprehensive histories because it makes a specific argument. As suggested by the title, Eddy believes that the prominence of arcades marked the golden era in the history of video games. For Eddy, the history of the video game industry is one explicitly dictated by the games themselves. The beginning of the golden era is marked by the introduction of *Computer Space* and pushed forward by the likes of *Night Driver*, *Space War*, *Pac-Man* etc. Eddy seems to argue that this was a golden era because of the massive innovation that was brought with new publications.[7] It is important to note that while 1971-1984 constitutes a golden era for the industry at large, the late 1970s to the early 1980s is the golden era for arcade games. While games did make considerable advancement in this period, there are a myriad of potential critiques of this argument. Trying to identify an era that constitutes as "best" is a harmful task for historians, as it dilutes our ability to accurately form a coherent understanding of the video game industry. That is to say, it is more important to figure how events of the 70s, 80s and 90s were connected opposed to isolating them according to which is a "golden-era. Further, Eddy needs to

[6] David Kushner, *Masters of DOOM: How Two Guys Created an Empire and Transformed Pop Culture* (New York, NY: Random House, 2003)
[7] Brian R. Eddy, *Classic Video Games: The Golden Age 1971-1984* (New York, NY: Shire Publications)

draw on a more diverse source base to support these arguments. Nonetheless, the book is beautifully published and makes a claim about the period before my focus in this paper.

The Coin-Op Era: 1970s-early 1980s

Arcades dominated the video game industry in the 1970s and into the 1980s.[8] Unfortunately for historians, various golden age theses have dominated the study of the arcade era. Historians do not often debate how or why arcades became the ubiquitous means for video gaming, rather focus on when arcade games could constitute the term golden era. Richard Stanton argues that arcades were a means for gaming as early as 1966, but it was not until 1978 that the golden age in arcade gaming began. This golden age was brought about by the publishing of *Space Invaders* and its monumental sales numbers. For all that is problematic about golden age theses, arcade games were certainly dominant in the video game industry in the 1970s and remained prominent for some time into the 1980s. The end of the arcade era is crucial for my story, as it established a stringent corporate culture that the industry would be in tension with throughout the 1980s.

Mentioned above, Brian Eddy's *Classic Video Games* is the most explicit articulation of the golden age thesis in video games. Eddy marks the beginning of the arcade era as the release of *Computer Space.* This was one of the first commercially successful video games, despite the prominence of previous games like Pong.[9] For Eddy, 1971-1976 was a period of gradual innovation marked by the release of new arcade games. New arcade publications brought new forms of games that rapidly improved relative to the 1960s and early 1970s. These innovations

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[8] Brian R. Eddy, *Classic Video Games: The Golden Age 1971-1984* (New York, NY: Shire Publications) 17.
[9] Brian R. Eddy, *Classic Video Games: The Golden Age 1971-1984* (New York, NY: Shire Publications) 5.

culminated in games like *Atari Football* and *Space invaders*, which improved core game elements and brought unprecedented commercial success.[10] The final two years of the 1970s established video games as a real American phenomenon rather than a fad (or so it seemed). Eddy argues that the early 1980s brought massive innovation to arcade games through design. Further, the arcade was a firmly established social venue.[11] This period saw the publication of games fundamental to the future of the industry like *Pac-Man* and *Rally-X*.[12] Popular titles were numerous in the early 1980s and the public had an intense interest for more.[13] Eddy argues that the factors that contributed to arcade games' rise are what ultimately lead to their fall. The arcade age had come to an end during the now famous Video Game Crash of 1983. The ambitious pursuit by developers to quickly meet demand for new games lead to a variety of poorly created and often copycat versions of old games.[14] For Eddy, the arcade era is primarily defined by the games that were published and their ultimate commercial success, constituting a golden age for video games spanning from 1978-1984.

Eddy's evaluation of the 1970s may be subject to contention, but this discussion operates outside the scope for this work. What is important is Eddie's characterization of the early 1980s. Even if we ascribe to the problematic and fairly unuseful categorization of the golden era of the video game industry, we are not provided with an adequate explanation of the crash in the industry. Eddy alludes to the role of home consoles in the reinvigoration of the video game industry, but does not give it significant credence as a transition from arcades. My argument in part is that we should view the rise of the home console as a transition out of the arcade era. The

[10] Eddy, *Classic Video Games,* 13.
[11] Eddy, *Classic Video Games,* 17.
[12] Eddy, *Classic Video Games,* 23.
[13] Eddy, *Classic Video Games,* 35.
[14] Eddy, *Classic Video Games,* 53.

home console was marketed with the appeal of the arcade system, but with a home and family angle. In 1982 Atari published a series of ads for its new home console. In one advertisement, it made an appeal to arcade games by showing that many of them were available on the new console. The ad emphasizes the convenience of the home console system, giving the consumer an increased level of comfort while gaming.[15] Other advertisements released for the Atari 2600 show a traditional nuclear family all playing various games. Further, there was a clear appeal to children, but also in enabling adults to play like children, making the console an appeal across age demographics.[16] This was in many ways the acade brought home.

To provide more context for this era, the Atari 2600 was released in 1977 as a landmark console for its improvements in hardware and Atari's marketing strategy. Atari partnered with Warner to launch a heavy ad campaign to promote the new product.[17] Contrary to Eddy's characterization of the early 1980s, the Atari 2600 was a success, selling around 30 million units. The idea of the early 1980s as a golden era for arcade is made complicated by the success and massive ad campaign by Atari. There was a clear desire for a home console system and the subsequent video crash is made more interesting by the relationship between arcade systems and home control systems. This shift in focus is important, as we need to understand Atari and early home consoles to fully grasp the crash in 1983.

Chris Crawford worked at Atari in the early years of the home console industry. They recall great fears within the company about the console's success, noting that employees were on

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[15] Dave Freeman, "One Hour of 80s Video Game Commercials" (video), August 20, 2017. https://www.youtube.com/watch?v=K-qhnh-KRgw. 7:34
[16] Dave Freeman, "One Hour of 80s Video Game Commercials" 3:45
[17] BusinessWeek, "Video Games: Atari VCS " Wayback *Machine*, May 9, 2007. https://web.archive.org/web/20070509092239/http://images.businessweek.com/ss/06/10/game_consoles/source/3.htm.

edge about justifying investment in the project.[18] Crawford describes the "coin-op " model for the process of designing games in the late 1970s and early 1980s. The coin-op system meant that a game would be tested in the arcade arena and if it found success, Atari would invest in creating a port for the home console systems. Crawford highlights the instability of this system, as games could be well ported and successful, but be poorly ported and fail. The coin-op system was driven by stringent economic standards, as games were often designed to be played in three-minute intervals. Despite these restraints, Crawford argues that many of the issues that hindered game development had been solved by 1981 and publishing video games was expanding in significant ways. For Crawford, these events were a build up to the explosion in 1982, where "... Atari sold 2 billion worth of hardware and software that year; Atari's sales were doubling every 9 months". It is difficult to verify these numbers, but the point is Atari was performing phenomenally under the coin-op model. Crawford points out that 1982 saw a massive number of titles published and the public was consuming these games at the rate they were being produced- even if the video games were not particularly good.

Underlying this story is the creation of Activation which certainly led to the increase in publications in 1982. In 1979 four game designers left Atari, feeling disrespected by the company's management and lack of recognition.[19] After a few years of legal strife, Atari settled with their former employee's, which set the legal precedent for "third-party" publications.[20] The four former employees could now design games that were meant for the Atari, despite not being

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[18] Chris Crawford "The Atari Years" *Erasmatazz.* http://www.erasmatazz.com/library/the-journal-of-computer/jcgd-volume-5/the-atari-years.html

[19] Ernie Smith "How Third-Party Game Devs Reverse-Engineered Their Way Onto Your Consoles" *Vice News,* May 18, 2017. https://www.vice.com/en_us/article/9amg87/how-third-party-game-devs-reverse-engineered-their-way-onto-your-consoles-nintendo-sega-atari.

[20] Smith, "How Third-Party Game Devs Reverse-Engineered Their Way Onto Your Consoles.

employed by the company. Not only was this monumental for the future of gaming publications, but indicated how the coin-op model was restricting creativity and overs-saturating the market.

Perhaps the writing was on the wall for the bust of the video game industry. Infamously named “The Great Video Game Crash”, 1983 saw the fall of a rapidly growing industry. A significant moment in the industry's crash was the release of *E.T* in the holiday season of 1983. The game was emblematic of many others produced in 1982- poor quality and obviously rushed. The vast majority of the *E.T* games were never sold during the most important season for the industry. In a podcast episode of *Engines of Our Ingenuity* Andy Boyd argues that a combination of technological change and poor industry standards lead to the crash. Designers pumped out games quickly, while corporate figures implemented various forms of in-game marketing to bolster profits.[21] Of course, the Great Video Game Crash was a complicated event centered around economics that I am not able to properly explain. But a 1982 article from the Gainesville Sun seemed to have an eye for the future. Robert Snowden Jones wrote “... some analysts believe that overproduction, consumer boredom and an invasion of cheap home computers will result in a major shakeout in the industry after Christmas”.[22] This article also indicates that systems were becoming more poorly made despite the fact that prices continued to go up. This article describes a fascinating conundrum, by which systems were getting cheaper, but game developers were being pushed to make more creative games. This is made complicated by the “coin-op” system, seemingly leading designers to make games more creative and more quickly- an obviously

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[21] Andy Boyd, “The Video Game Crash of 1983” *University of Houston,* January 7, 2016. https://uh.edu/engines/epi3038.htm

[22] Robert Snowdon Jones, “Home Video Games Are Coming Under a Strong Attack” *Gainesville Sun,* December 12, 1982. https://news.google.com/newspapers?nid=1320&dat=19821212&id=L2tWAAAAIBAJ&sjid=q-kDAAAAIBAJ&pg=1609,4274079&hl=en

impossible task. As such, the home console industry crashed as a matter of its own creation. Newspapers and accounts from those at Atari indicate that it is not only over saturation of the American market that led to the crash, but oversaturation in addition to poorly made games and unhappy video game developers. This is especially important when we consider how *DOOM* saw a designer culture that gave programmers far more freedom and room for creative growth.

The Rise of Nintendo and Steady Growth of PC Gaming: Mid 1980s

Understanding the crash of 1983 in these terms is crucial for contextualizing the mid-1980s for the American video game industry. Crawford notes that personal computer sales took off at the same time that home console sales plummeted. This observation is supported by Peter W. Mitchell, who wrote in the *Boston Phoenix,* "The home computer is no longer on the range of the consumer-electronics field: in dollar terms it's the fastest growing segment of the business and the summer's Consumer Electronics Show in Chicago, computer and video games were given an entire exhibit hall of their own".[23] The article goes on to discuss competition between various computer companies, as well as computer companies' competition with home console producers. The author writes that competition drove computer prices down. As time passed, the price of high quality computers eventually met that of home consoles, leaving consumers with a core question "Who was going to pay $200-plus for a machine that could only play games?". Thus, home computers contributed and grew out of the momentary crash of the home-console. But the home computer was markedly different from the home console in

[23] Peter W. Mitchell, "A Summer CES Report: The Latest Home Computer Offerings" *The Boston Phoenix,* September 6, 1983. https://news.google.com/newspapers?id=gn0hAAAAIBAJ&sjid=tYoFAAAAIBAJ&pg=5584%2C3561802

important ways. It now had functions that allowed for more complex game design and allowed third-party developers to proliferate.[24]

By 1984 the home-computer game industry was seeing nominal growth. But the industry experienced significant struggle with the massive skepticism surrounding the video game industry as a whole.[25] It seems that the video game industry was drudged through the mid-80s by the unlikely survival and growth of computer games. The magazine *Computer Game World* held a conference in 1984 in the midst of the crash of 1983 The existence of the magazine and conference indicates how computer games survived this period, but also their distinctive qualities that allowed for its persistence in the American market. A panel was held with some of the leading figures in gaming at the time, including the now legendary Sid Mier and Chris Crawford (referenced above). One distinctive quality of computer games was the substantial competition between Commodore, Apple and Atari to improve hardware, all the while prices dropped. This sentiment is referenced in Crawford's blog, as he argues that the C64 computer was a significant reason computer games succeeded amidst the crash.[26]

Among the clear technological and economic differences in home console gaming and computer gaming, the general sentiment around game design seems to be important. Given the prominence of third-party designers, the expert panelists made reference to the collective struggles and ambitions of designers as a whole. Rather than discussing methods to make games quicker and more efficient like under the coin-op system, these panelists discussed some ways

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[24] Chris Crawford "The Atari Years" *Erasmatazz.* http://www.erasmatazz.com/library/the-journal-of-computer/jcgd-volume-5/the-atari-years.html

[25] Crawfrod, "The Atari years".

[26] Chris Crawford "The Atari Years" *Erasmatazz.*
This is echoed by the panelist Richard Garriott. "The CGW Computer Game Conference" *Computer Gaming World,* October 1984. http://www.cgwmuseum.org/galleries/issues/cgw_4.5.pdf.

that designers were looking to burst into new territory. Hardware limitations were not so much a barrier to quickly making a game, but a barrier to what is possible within the game. Dan Burton said "If we can get people to sit down at a game and through their own intuition, figure out how things are and what things will occur, then we can make the next break into what games can really be". While abstract, the sentiment of lead developers in the computer game world is markedly different from most accounts of design mentality before the crash of 1983. This difference is crucial for understanding how the culture of the video game industry was developing from the crash of 1983 to the later part of the decade.

Tracking the archives of *Computer Game World* through 1987, it seems the mentality and competition described in 1984 was persistent as the decade progressed. In an issue from 1988, Don L. Daglow, designer for Electronic Arts and Broderbund, described his thoughts on computer games and took the reader through a typical week. Daglow's work was not driven by restrictive corporate incentives, but by a tedious process of game design that was driven by his creative ambition. His typical work week seemed to be busy, but he was given numerous freedoms in how he works on and approaches projects.[27]

Even if designers had more freedom, what do the numbers say about the period from 1984-1988? Most figures for home computer sales are unreliable, but we can delineate some key points about how home computer games were developing. As mentioned above, the C64 was one of the most important computers of the 1980s. Its founder, Jack Tramiel, claims that upwards of 22 million units were sold by 1994 (when it was put out of production). In 2011 Michel Steil evaluated this claim and estimated that 12 million units were sold in total. This is only an

[27] Don L. Daglow, "The Twisted Path to Success in Entertainment Software" *Computer Gaming World,* August 1987. http://www.cgwmuseum.org/galleries/issues/cgw_39.pdf

estimate and official company reports indicate that somewhere around 17 million C64 were sold. Yearly estimates from Steil indicate that 1 million units were sold in 1984, with steady growth into 1987 with 7 million units sold.[28] As a quick comparison, the Atari VCS release in 1977 sold approximately 25 million units.[29] Thus, the computer game market was substantial enough to mirror sales of the golden age of video games, while designers seemed to have experienced an unprecedented level of creative freedom.

In January 1988 Chris Crawford published an article in the *Journal for Computer Game Design* that reflected on 1987. For Crawford, 1987 signaled a stability that had been absent from the industry and a sign of prosperous years to come.[30] This stability was built from the rise of Nintendo in the American market. With gradual growth, devoted designers and competitively priced computers, the home computer game industry was being forged through the 1980s. It was during this time that Nintendo was making their presence known in the American market. As noted above, the crash of 83 led to intense skepticism from investors in future projects in the video game industry. But the Japanese company Nintendo began to explore the American market just two years after the crash.[31] Multiple writers in the video game industry argue that Nintendo's entrance into the American market was based on philosophies regarding the video game crash. For Nintendo, the crash was the product of a massive amount of poorly created games that

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[28] Michel Steil "How many Commodore 64 computers were really sold" *pagetable,* February 1, 2011. https://www.pagetable.com/?p=547

[29] The New York Times "The New York Times Guide to Essential Knowledge: A Desk Reference for the Curious Mind" (New York, NY: St Martin's Press, 2011) https://books.google.com/books?id=6pGauDNi-QUC&pg=PA500#v=onepage&q&f=false

[30] Chris Crawford"The Atari Years" *Erasmatazz.* http://www.erasmatazz.com/library/the-journal-of-computer/jcgd-volume-1/volume-1-number-4-decemberhtml

[31] Richard Stanton, *A Brief History of Video Games: An Evolution of a Global Industry* (London, UK: Robinson, 2015) 118.

flooded American consumers.[32] Nintendo strived for higher quality games, ones that coincidentally began to take on some characteristics of games in the home computer market.[33] Nintendo's success in the American market led to a fierce competition with SEGA. Blake J. Harris's *Console Wars* is a deep insight to the economic battles between the two companies, but gives less insight to how this battle was shaping and remaking the industry into the early 1990s. The transition from the crash of 1983 to the "console wars" is crucial to view in light of one another to provide an idea as to how the industry was developing a culture that would eventually produce *DOOM.*

The "Console Wars": Late 80s

In 1988 ABC aired a special *Nuts for Nintendo* which discussed the seemingly surprising rebirth of the video game market. The segment features interviews with customers who traveled "thousands of miles" to acquire either the Nintendo console or some of their new games, including *Super Mario Bros 2.* The host claims that Nintendo products were now the most successful toy of all time, citing an expert in the toy industry Bruce Apar. Apar claims that Nintendo sales in 1988 were somewhere around 1.5 billion dollars or three times that of Barbie sales. The host then posed the question-- why has Nintendo performed so well? They indicate that the answer has to do with the quality of games. Game designer Gregory Fishbach discusses how the improved technology from games before the Great Video Game Crash has allowed for more visually compelling and exciting games.The segment then moves to a broad conversation

[32] Talks at Google, "Console Wars: Sega, Nintendo, and the Battle that Defined a Generation" (lecture) posted July 11, 2014. https://www.youtube.com/watch?v=mDlhclXHZF0
[33] Richard Stanton, *A Brief History of Video Games: An Evolution of a Global Industry* (London, UK: Robinson, 2015) 118.

to how Nintendo was able to move into the American market. Apar and the host discuss how Nintendo bought out many licenses to games that tanked during 1983 and the competition generated between third-party developers to become published by the company.

This ABC segment suggests that the video game industry had returned to the American market in full force, but this time it was different. Nintendo's rise in the American market was one that focused on making quality games and was built on competition between third-party developers. A 1989 publication of *Computer Gaming World* admits that Nintendo established a dominant place in the video game industry. The game system was clocking an estimated two-billion dollar a year industry, but the disk-based entertainment system had grown as well, being worth around 300 million dollars in 1989. The video game industry now posed a diverse ecosystem of developers that were competing to publish games. The special report lists over twelve different publishers that were realizing anticipated games in 1989. While these games were thematically diverse, many of them were considered to "action-games".[34]

By the turn of the decade the video game industry had made a remarkable turnaround. The few scholars that address the video game industry in the 1980s chalk this turnaround to the competition between Nintendo and Sega. Certainly the competition between these two companies played a major role in the growth of the industry from 1986 through the end of the decade. Closer analysis, however, reveals that Nintendo was far more important to the growth of the American video game industry than their competition with SEGA. Nintendo quickly bought out licenses to dead titles and encouraged competition between third party developers. Another crucial factor was the sustained growth of the personal computing industry. While the home

[34] "Soaring into 1989" *Computer Game World,* February, 1989. http://www.cgwmuseum.org/galleries/issues/cgw_56.pdf

console industry died because of poor quality games, the personal computing industry grew as one that teetered between being a niche market and popular consumer market.

While I resist viewing the late 80s through the lens of a battle between SEGA and Nintendo, there are some important elements revealed by this approach. For instance, one of SEGA's most important changes in the 1980s was Hayao Nakayama's decision to offer Tom Kalinske the role of CEO at SEGA. Kalinske would re-build SEGA in opposition to Nintendo and recreate the way that the console would compete in a market dominated by one company. Harris notes four crucial ways that Nintendo shifted their approach. First was to include Sonic the Hedgehog as a free game with the Sega Genesis. While this was an immediate financial burden, Kalinske predicted that it would lead to significant gains in the long run. Another short term burden but long term gain would be to lower the price of Genesis to be significantly cheaper than the NES.[35] Further, SEGA would be oriented as a product that was "hip" and worked towards a more mature audience. Kalinske made the decision to ramp up SEGAs marketing budget to be in direct opposition to Nintendo. Finally, Kalinske decided to focus development of games in the United States, while many games from Nintendo were produced in Japan, for Japanese audiences and shipped to the United States.[36]

Kalinske was able to successfully implement his plan and there certainly was a competition between the two companies. But SEGA's "Saturn" console eventually failed, Kalinske left and the company fell to the wayside before the decade ended. Rough sales numbers show that the Super NES sold 49 million units, while the Genesis sold 29 million.[37] This was the

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[35] Blake Harris, *Console Wars: SEGA, Nintndo, and the Battle That Defined a Generation* (New York, NY: HarperCollins, 2014) 96.
[36] Harris, *Console Wars.* 97.
[37] Buchanan Levi "Geesis vs. SNES: By the Numbers" *IGN,* july 13, 2016. https://www.ign.com/articles/2009/03/20/genesis-vs-snes-by-the-numbers

peak console for SEGA, falling 20 million units behind Nintendo at the height of the “war” between the two. In *Console Wars* Harris often poses Kalinske as a hero of the story, a savvy leader who changed a small company into one that could compete with the dominant superpower. If SEGAs best sales numbers were 20 million behind Nintendo and the company falters after just a few years, how effective was Kalinske’s plan? Is SEGA vs. Nintendo the defining event of the video game industry in the late 1980s?

Two years into the battle between SEGA and Nintendo ABC news aired a segment that was focused on Nintendo during Christmas of 1990. We should note that a segment on video games focuses on Nintendo primary, opposed to SEGA or even the battle between the two. The host notes that Nintendo could be approaching a challenging year due to consumers already having hardware and competition from other companies. The host notes, however, that Nintendo has not had much competition, as it currently holds 90% of the market. The segment then goes to an interview with Tom Kalinske, who interestingly does not vocalize any of the plans that are discussed in Harris’ book. Kalinske highlights the superior 16 bit system over the 8 bit system, to which many advertisements from SEGA focused on. Kalinske believes that SEGA is competitive because of “better graphics, more levels of play, better animation on the screen, longer games, and just more fun to play”. A plausible explanation for SEGA’s rise could be two-fold but diverge from Harris' explanation. First, SEGA sold a quality console that had better technology than the dominant one. Second, SEGAs consoles rose while Nintendo's market saturation reached its peak, pushing consumers to explore new products that had better technology. Returning to the ABC segment, it shows Nintendo’s Gamemaster Howard Phillip’s rebuttal, saying that Nintendo has far more fun and interesting games, despite being behind in regard to

technology. There is one final part of this segment that flies in the face of Harris' explanation. In the 1990s Nintendo was marketing the Gameboy with a strong focus on the adult market. Howard Phillips cites statistics that show a huge portion of video game players were over 18. If SEGA's master plan was to focus on the adult market because Nintendo was focused on younger audiences, then it seems strange that Nintendo was pushing a product aimed at adults.[38]

The extent that there was any war at all is unclear, while there certainly was competition. The actual nature of this competition is further unclear as it is perfectly reasonable to suspect that the SEGA Genesis' better technology pushed the company forward as a matter of right place and right time. In 1991 ABC aired a segment discussing accusations against Nintendo for monopolizing the market. While falling five percent, Nintendo still maintained eighty-five percent market saturation at what was no doubt the peak years of SEGA competition. The segment covers an annual video game trade show by highlighting Nintendo's powerful place and the much smaller role of other game publishers. The segment does not start by discussing SEGA, but instead the company TENGA. An executive at the company says Nintendo has monopolized the market by having a strong hold on retailers who sell video games. The second company featured is not SEGA either, but American Video Entertainment. The executive at American Video Entertainment charges that manufacturing prices at Nintendo have likely gone down, but the lack of competition has not given a reason for prices to fall. The interviewee resoundingly says "There is no competition for them". A representative for the Federal Trade Commissions echoes this, saying that Nintendo clearly fixed prices with retailers to stop any potential competition. The FTC found Nintendo guilty, and they agreed to pay back a large sum to the

[38] Grooveraider, "The Console Wars-- XMas 1990" *Youtoube,* December 9, 2008. https://www.youtube.com/watch?v=n_E2lh1lgmk&t=16s

consumer through discounts for their future products. Nintendo then released their new console in 1991 which cost far more, levying the impact of the consumer settlement.[39]

This segment is striking, as it discusses monopoly and competition in relation to Nintendo, but does not include SEGA. How could a Frontline segment from 1991 about competition in the video game industry not feature SEGA? Perhaps SEGA was not as important as we would like to believe. Perhaps Harris was right in part, as Nintendo was so strong because of their exceptional business acumen. In many ways Harris romanticizes this corporate battle. In an interview he says "back then it really was like the wild, wild west. These were the lawless days of the industry… it wasn't even an industry at the time, it was just sort of this growing hobby".[40] This quote is troubling in light of my previous discussion of the stringent corporate culture experienced during the late 70s and early 80s. By pushing against Harris' work, I hope to show how Nintendo's dominance in the American market should be positioned as a transition between the crash of '83 and the publication of *DOOM.* While the home computer market was experiencing steady growth, video games were reentering public consciousness through the quality games that Nintendo released. As will be seen in *DOOM,* Nintendo had become a benchmark for gaming, both in story-design and game mechanics- one that the developers of *DOOM* posed their games against. Viewing the late 80s through the lense of a battle between SEGA and Nintendo is not only historically inaccurate, but obscures our ability to view the industry as a series of connected events.

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[39] Grooveraider, "Nintendo Accused of Monopolizing The Game Industry - circa 1991" Youtube, March 4, 2011. https://www.youtube.com/watch?v=nwd56K7rp7A&t=11s.
[40] Dey Street Books, "Blake J. Harris on Xbox, Playstation, Nintendo, SEGA, and Indie Gaming" Youtube, April 15, 2014. https://www.youtube.com/watch?time_continue=18&v=nL41ZgkFGrI&feature=emb_title

Violent Video Games and the build up to DOOM: The early 90s

While action games have existed since the inception of the arcade, the issue of violence exploded in the early 1990s. In an undated segment titled "The Dangers of Video Games" ABC news hosts discussed general moral issues related to video games. They cite retailers who argue that more violent games are more popular and easier to sell. They also cite David Sheff (mentioned in the introduction) who argues that the combination of violence with obsession is an increasing problem as the video game industry has grown.[41] In another undated segment, MSNBC hosts discuss violence with a video game developer of "RedNeck Nightmare".[42] The developers charge that violence in video games should be viewed no different than violence found in other forms of entertainment, citing Greek writings as containing high levels of violence. Drew Markham argues that the focus should not be on violence but how improvements in technology are allowing for more complex depictions of violence. He believes that the mechanics of action games are what drive competition between developers which ultimately is a positive for video games. The segment then presents a fairly expected response from experts who charge that the violence poses negative effects to children who play the game. The actual truth of violence and video games is less important than the fact that this was a dominant debate among consumers and developers that was crucial during the 1990s. As Markham argued, games improvements in technology were leading to more realistic game spaces, a likely explanation for why this became a significant place for debate in the early 1990s.

[41] Groovraider, "The Dangers of Video Games" Youtube, March 27, 2008. https://www.youtube.com/watch?v=10V9Hj-S7_0
[42] Groovraider, "The Dangers of Video Games"

It may be strange to think that violence had a major place in video game discourse considering that Mario and Sonic the Hedgehog were supposedly competing for a leading role in the video game industry. As with the mid 1980s, it seems that memory of this time has forgotten how personal computing played an important role. In many ways the debate over violence was a debate regarding personal computing. The January 1991 cover of Computer Gaming World features a battle scene about the Electronic Arts title *Powermonger.* February 1991 features a space battle space from the game *Renegade Legion: Interceptor.* March 1991 shows a woman with a sphere and a man with a gun being chased by a dinosaur for the game *The Savage Empire.* And so every cover of Computer Game World up to August 1991 featured an action-based game that implied or featured violence on the cover. In 1992, nine of the twelve covers of *Computer Game Word* featured or implied violence. The publications that mattered to consumers of the magazine were action-based titles. This is made further interesting when comparing these magazine covers to that of *Nintendo Power*. In 1991 only four of the twelve publications had a weapon or depiction of violence on the cover. Only two covers in 1992 had a weapon, while 2-3 others implied violence.[43] As such, it seems that the growing topic of violence was a problem associated and connected to computer gaming opposed to gaming. There was certainly violence in console gaming in 1992, but it would not become a significant issue until 1993.

What exactly motivated the console industry to take on more violent games may be a case of inevitability. As I will discuss in detail below, violence/action drove game design forward at a rapid pace and consumers were drawn to the genre. *Mortal Combat* was initially released on arcade systems in 1992, but was ported to both Nintendo and SEGA consoles in

[43] "Ninetendo Power" *Retromags,* 1991-1993. http://www.cgwmuseum.org/galleries/issues/cgw_56.pdf https://www.retromags.com/magazines/usa/nintendo-power/page/2/?d=5

1993. SEGA and Nintendo approach the issue differently, as Nintendo made efforts to censor elements of the game and SEGA allowed for cheats that would make the game more violent. In either case, the impact of home consoles playing such a violent game was a significant catalyst for the controversy that would follow in the winter months of 1993.[44]

While Nintendo sales maintained huge numbers and SEGA put on a formidable stand, both were being threatened by national outcry to depictions of violence. In 1993 Toys R Us was leveling threats to pull certain games from shelves because of violence in games that were played by children.[45] In addition to retailers, politicians were taking a firm stance against games that was of great worry to the world's largest game companies. By the end of 1993 and beginning of 1994 there had been two congressional hearings on video games and violence. The hearings were of great concern to the major console companies of the time, each sending representatives to the hearings and embracing cooperation on a rating system.[46] The point is that Congress and retailers were posing a very real threat to the home console industry, all the while the most violent video game of the day was about to explode.

As suggested by one developer above, violence was not an arbitrary or mindless production of the video game industry: violence and technological development went hand in hand. The action genre in games is/was appealing for similar reasons as in film. The more advancements that were made, the more violent it seemed games were getting. The Sixth Annual Computer Game Developers in 1993 gives insight into how the computer game industry was

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[44] Rob Crossley, "Mortal Kombat: Violent game that changed video games industry" June 2, 2014. https://www.bbc.com/news/technology-27620071

[45] Tom Redburn, "Toys 'R' Us Stops Selling a Violent Video Game", *The New York Times,* December 17, 1993 https://www.nytimes.com/1993/12/17/nyregion/toys-r-us-stops-selling-a-violent-video-game.html

[46] Report of the Committee on Governmental Affairs United States Senate and its Subcommittees for the One Hundred Third Congress, 1995, 103 Cong., 1st sess. https://www.congress.gov/104/crpt/srpt27/CRPT-104srpt27.pdf

taking on a distinct path from the home console industry. Game developers are seen wearing funny hats, drinking beers and engaging in enormously complicated conversation about video games. While the computer game industry seemed to have pushed through tough times with a clear vision for the moment, game developers at this conference were realizing the phenomenon they were a part of. Some suggested the future of computer games would blow up in scale, making computer game developers a part of much more significant global matters. Others saw the ways that the more open nature of the computer game industry would allow for positive change. The conference featured talks about how to craft appealing stories and how to manage improving technologies. One talk by Micheal Becker outlines the problems that marked the current graphic design element of computer game design. Becker argues that artists are often contracted as third parties, subsequently overworked and pushed to copy the works of previous games or art. Becker suggests that more work in the computer game industry takes place within the companies themselves opposed to contracting artists. Further, the artists should be involved from the start and integrated into the game development process. As such, violent video games were becoming the dominant genre as developers were seeing increased levels of freedom. Another talk by John Taylor emphasizes that the future of computer games would be in multiplayer and developers should be attendant to creating interfaces that support this interaction. Taylor gives a number of suggestions as to how multiplayer can be incorporated into games, but that it should be considered as the medium grows. As such, violence was one of the central means by which developers were using their increased creative freedom to innovate within video games. This is crucial to begin to wrap up the phase of video game development

into the publication of *DOOM*. John Romero was an artist who was attendant to the future of multiplayer games. He also produced two franchises that were built on violence.[47]

DOOM: 1993

The turbulence of the 1980s was settling by the early 1990s, as the home-console industry was stabilizing, new competitors were emerging to battle with Nintendo and the home computer game industry was attracting talented developers. *DOOM* represented the culmination of the 1980s better than any other because of its unique cast of developers.The game was created in a messy and unorganized mid-sized studio in Dallas. Home footage shot for *Software Creations* reveals a work environment that is more like a home .[48] Family members wander through the studio, conference rooms are rigged for sound engineering and offices are stacked with soda, CDs and computers. Lead designer John Romero is seen playing through newly published games and walking through *DOOM*, while programmer John Carmack is nowhere to be found. This home footage captures the essence of a new era in the game industry that was built on the turbulence of the 1980s. *DOOM* shaped the future of both PC gaming and console gaming throughout the decade, firmly establishing the prominent position of first-person shooter. This may just be one game among many that contributed to this significant change in the industry, but it is a useful landmark to wrap up a history of the video game industry that has not been coherently told. David Kushner's *Masters of Doom* details ID Software in the 1990s through the lives of Carmack and Romero. He poses Romero and Carmack as opposite

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[47] "Consensual Hallucinations and Good Vibrations: CGW's Report on the Sixth Annual Computer Game Developers Conference" *Computer Game World,* July 1992. http://www.cgwmuseum.org/galleries/issues/cgw_96.pdf

[48] CuteFloor, *A Visit to is Software* (November 1993)" (video). March 8, 2012. https://www.youtube.com/watch?v=HpEBUV_g9vU

personalities who came from similarly troubled childhoods. The two were vastly different in personality and approach to developing, but for a short period aligned to create some of the most influential games of all time.[49]

John Romero and John Carmack were personifications of talented creative programmers who were resistant to authority. Both had spent their childhood rebelling against authority figures, spending their teenage days programming games.[50] The two would eventually team up at a mid-sized game company *Softdisk.* Carmack and Romero would team up on projects and split work between them and a couple others. Carmack was responsible for creating game engines and Romero was tasked with software and design. The two had a considerable amount of leverage on their bosses, as they pushed to make their own original games on their own timeline. Their games would not be reproductions of old systems that dominated arcades and consoles, but entirely new engines, stories and design. The most important development at Softdisk was when Carmack created an engine that would allow for side-scrolling, like in Mario, but adapted for games on the PC.[51] The implications of this development would warrant a whole book itself- this was huge for games on the PC. Kushner makes the important observation as to how the creation of this engineer aligned with larger changes in the technology sector. The price of home computers were falling each year and were soon to become something akin to a home appliance.

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[49] David Kushner, *Masters of DOOM: How Two Guys Created an Empire and Transformed Pop Culture* (New York, NY: Random House, 2003)
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[50] Kushner, *Masters of DOOM,* 13-27. This book provides numerous interesting and important insights to the "two John's" upbringing. Romero was sort of a rebellious hard-rock kid who was distant from his biological father. Carmack was incredibly smart, but felt restricted by his parents and often lonely. One story details Carmack blowing a whole in the wall at his local high school to get to their computers.

[51] Kushner, *Masters of DOOM,* 49.

Apparently Romero had this realization himself, seeing the potential of a home appliance that could play games at the same level as Nintendo.[52]

Romero was so excited by the new engine that he posed the idea to leave and start a brand new company. After some persuasion and sketchy work to hide plans from Softdisk, Romero, Carmack and a couple others spent a weekend making an exact copy of *Super Mario Bros 3* on the PC. They sent the game to Nintendo, but they replied that they did not have an interest in the PC port market.[53] This is crucial, as Nintendo was the benchmark for the most talented developers in the PC market. Not discouraged, Romero, Carmack along with "Adrian, Lane, Tom and Jay" formed a group called Ideas from Deep where they worked on an original game with their new engine, while keeping their jobs at Softdisk to pay the bills.[54] Eventually their boss AI Vekovious confronted Romero about the strange behavior and allegations from other employees. The team were not so worried by this time, as they had published a game under the new engine that was bringing in money. And so a long series of negotiations ensued and a deal was made to avoid lawsuit: but Romeo, Camack and a couple others were gone, fitted with a new engine and the money to back a new company- ID Software.[55]

The freedom of working for their own company enabled a slew of new innovations in the side-scrolling engine which was quickly morphing into a 3D engine.[56] Carmack used the concept of raycasting to create a 3D world which a PC could handle. Romero had the idea to use the

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[52] David Kushner, *Masters of DOOM: How Two Guys Created an Empire and Transformed Pop Culture* (New York, NY: Random House, 2003) 52
[53] Kushner, *Masters of DOOM* 57.
[54] Kushner, *Masters of DOOM*) 67.
[55] Kushner, *Masters of DOOM,* 77.
[56] David Kushner, *Masters of DOOM: How Two Guys Created an Empire and Transformed Pop Culture* (New York, NY: Random House, 2003) 77.

engine for a fast paced action game called *Wolfenstein.*[57] The action and imagery of World War 2 could show off the 3D and side scrolling innovation of Carmacks work. The game was supposed to be fast and brutal.[5859] The team published *Wolfenstein 3D* soon after moving to Dallas Texas. The game saw strong sales numbers and began to generate a devoted fan-base.[60] It is important to note that ID Software released both their initial titles through Software Creations as "shareware". The concept was that players would get a portion of the game free and buy the rest if they enjoyed. This concept flew in the face of arcade games, home console games and even other personal computing publishing companies. It is incredible to think that ID Software was making millions of dollars while giving way a portion of their product.[61] Upon this initial success, the team worked to make a few more chapters of *Wolfenstein,* but these were soon complete and they were moving on to new ideas.[62]

Finally we arrive at *DOOM.* But for as coveted as this game is and the team that made it, there's a reason that it was the last game that would be published by the original ID Software cast. Kushner argues that tension was developing personally and creativity throughout the office. While everyone liked the idea of a game set in hell, its realization created tension between the game designer Tom and Carmack. Carmack declared yet another innovation, one that departed from standards of the industry, but also against the formula that had made ID Software a multimillion dollar company. Carmack wanted a game where levels were not so abrupt, where the player model could move seamlessly from one layer to another. Carmack seemed to be

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[57] Kushner, *Masters of DOOM,* 95.
[58] Kushner, *Masters of DOOM,* 97.
[59] Kushner, *Masters of DOOM,* 103.
[60]Kushner, *Masters of DOOM,* 113.
[61] Kushner, *Masters of DOOM,* 113.
[62] Kushner, *Masters of DOOM,* 123.

unmatched in finding unlikely solutions to the hardware restrictions that held games back. Computer technology was improving more quickly and Carmack was quick to capitalize. *DOOM* was going to feature a variety of special effects that had never been seen, or certainly had not all been brought together in one game.[63] Romero worked with Carmack to design a map and characters that utilized the developments to the *DOOM* engine.

The ID Software team was constantly capitalizing on Carmacks engine, designing levels and elements that would highlight how fast the game would play on a PC.[64] By late 1993, *DOOM* had come together and the ID Software team had yet another original idea for moving their game. They decided to release a demo of *DOOM* at no cost to retailers- they only asked that retailers moved as many demos as possible. While *DOOM* was complete by traditional standards, there was yet one other element that was important to both Carmack and Romero- network. A network feature would allow two different players to play the game against one another. Carmack produced the networking aspect of the game in a matter of weeks.[65] Everyone at ID Software participated in something that had never been done on PC, that simultaneously was run on an engine that was like none other.[66] The game was finished in early December and made public during the dead of night on December 10th. I do not think many would contest the claim that *DOOM* is among the most influential games of all time. What happens after *DOOM's* publication is another story. But the engine that powered *DOOM* and the networking feature changed the industry forever, marking a distinct shift in gaming on the PC and console. While

[63] David Kushner, *Masters of DOOM: How Two Guys Created an Empire and Transformed Pop Culture* (New York, NY: Random House, 2003) 130.
[64] Kushner, *Masters of DOOM,* 145.
[65] Kushner, *Masters of DOOM,* 149.
[66] Kushner, *Masters of DOOM,* 150.

setting a stage for the future, *DOOM* was emblematic of the enormous change experienced during the 1980s and a useful end point for this history.

Conclusion

Like Harris or Kushner, who I am skeptical of for romanticizing parts of the game industry, I have my own biases that penetrate my telling of the video game industry. I explored this story because of my own passion for the *DOOM* franchise and with an interest in understanding the contemporary state of the game industry through its history. Given these biases, my broadest argument is that we should understand the video game industry in the 1980s with more coherence as to how events were connected to one another. To form this framework, I see the Great Video Game Crash of 1983 as a product of the coin-op model and its restrictions on developers. The steady growth of the home computing industry and its more open designer culture was crucial in light of the crash, as home computer games were growing steadily. It was Nintendo's dominance in the American market that allowed for its re-boot with new industry standards. In my view, figures like Chris Crawford, John Carmack and John Romero proliferate because of a culture that was distinct from the coin-op era and the console industry. The few histories that have been told are either great-man theories or golden age thesis, lacking a rounded view of the complex and distinct industries that were dying and being born all under the category of “video games". I have attempted to use various online archives, magazines, reveiws, newspaper publications and TV segments to understand the nature of the video game industry in the 1980s. Finally, I view *DOOM* as a logical useful endpoint in tracking the video game

industry from the beginning of the 1980s into the early 1990s. *DOOM* is useful in reflecting my three thesis and how each is connected.

My project lacks some crucial pieces that I hope historians will focus on more in the future. Many (but not all) of the core figures mentioned in this paper are white men and the industry has been anything but immune to racism and sexism as a relatively new pursuit. My time spent in online archives revealed various publications that employ problematic representations of women and minority groups. My history is not a complete one and I hope my future work can explore and interject the important role of race and gender to the early days of the industry. While I feel my arguments are original, more investigation into any one of my three thesis would allow for a deeper understanding of the time. While I am confident in how I compiled various types of sources, a purely statistical based analysis would be incredibly useful for historians. Again, I hope that this work can serve as a foundation for future ones.

In an interview from 2008 Crawford remarked "I am taking a very different approach. Instead of people starting off by saying 'what sells'- 'how can we figure out what sells' I go back to deep deep fundamentals".[67] Crawford described himself as an outlier during the 1980s and 1990s, but he is an outlier now more than ever. The video game industry seems to have been consumed by neo-liberal rationale of pushing maximum profits and every platform has been affected. Creativity seems to be lacking, as most new yearly publications are rehashings of old games or concepts. Microtransactions are now ubiquitous to the point where some games are entirely geared to get their player base to buy cosmetics, instead of gearing games around actual gameplay. While there are some expectations and indie developers publish creative games each

[67] I.F. Only, "Christ Crawford Interview from GET LAMP" Youtube, August 31, 2012. https://www.youtube.com/watch?v=3BPERIDSxKo

year, I do not think many would deny the fact that the industry's growth has stifled originality. I do not believe this means we should harpen back to a "good-old days" mentality- there likely was not a good old days. I charge, however, that there is something special about the video game industry- especially the home computing culture that gave a space for cultural outcasts and people who were "othered" to find creative freedom and business success.

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Honor Code

I have acted with honesty and integrity in producing this work and am unaware of anyone who has not

W. Rains Browning